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~~TOP SECRET RUFF~~

TCS-9895-65
19 August 1965
Copy 9

Declassification Review by NIMA / DoD

MEMORANDUM FOR: Chairman, Joint Atomic Energy Intelligence Committee

THROUGH : Chief, Requirements Branch
Reconnaissance Group, CGS

SUBJECT : Twenty Selected Epicenters

REFERENCE : Requirement JAEIC 5-5
(NPIC Project 11340-5)

The enclosed material which includes copies of each of the pre- and post-event annotated photo mosaics of the first group of 20 selected epicenters and a photo interpretation report on each, as well as a list and a location map, is forwarded in response to the referenced requirement. This completes the project on the first group. An analysis on the second and third group of epicenters is in progress and will be forwarded when completed.

[redacted]
Colonel, USA
Assistant for Photographic Analysis, NPIC

Enclosures:
See page 2

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Enclosures:

1. TCS-87654-65 (Copies 1-24)
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2. List of 20 Selected (U) Epicenters within the USSR with no Depth Determination [redacted]
3. 20 Epicenter reports
4. Location Map

25X1D

Enclosure 2 of
TCS-9895-65

Twenty Selected (U) Epicenters Within the USSR with

No Depth Determinations - 1964

SEQ	DATE DA MO YR	COORDINATES	MAG
005	5-1-64	38.500N 72.700E	4.1M
032	26-1-64	54.400N 158.300E	3.9M
052	12-2-64	39.300N 55.700E	4.3M
078	29-2-64	53.400N 91.200E	4.4M
111	22-3-64	40.500N 69.600E	4.3M
129	9-4-64	51.000N 92.100E	4.2M
155	28-4-64	37.900N 71.900E	4.2M
178	19-5-64	38.500N 73.500E	4.1M
198	31-5-64	56.200N 160.800E	4.0M
222	19-6-64	65.100N 149.200E	4.4M
243	6-7-64	52.900N 157.500E	3.9M
270	25-7-64	56.400N 161.700E	3.7M
295	13-8-64	54.300N 158.800E	4.5M
318	27-8-64	55.800N 161.900E	3.9M
351	18-9-64	53.800N 159.600E	3.9M
378	6-10-64	40.300N 53.600E	4.2M
404	24-10-64	65.7--N 145.400E	4.6M
466	11-11-64	56.800N 161.200E	3.7M
562	2-12-64	39.100N 70.700E	4.3M
585	17-12-64	56.400N 162.500E	4.1M

EPICENTER: 5

DATE: 5 Jan 64

COORDINATES: 38-30N/72-42E (38.50N - 72.70E)

COVERAGE, Pre-Event: 25X1D
Post-Event:

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

25X1D

Geology: Bare rock exposures are limited in extent. In the post-event photographs north slopes are covered by deep snow, south slopes are mottled with a recent light snow. [redacted] photographs (pre-event) have light snow on both north and south slopes. Steeply dipping beds or joints can be recognized but igneous rocks, if any are present, cannot be recognized. As all the areas have been glaciated it is impossible to distinguish fault-line scarps by their topographic expression. The rectilinear pattern of valleys suggests major fault systems that strike N and N 20 W.

Terrain: The epicenter is on a peak in the Pamir Mountains. Relief in the area is several thousand feet. Mountains are glaciated and formed of intersecting cirques.

Soils: Soils are absent except in the valley of the Kudara River which contains fans and alluvial deposits.

Hydrology: Depth to ground water in the Kudara valley is probably less than 10 feet. There are probably numerous fracture zones in the mountains containing water but there is no widespread water table.

Discussion: The Pamirs are known to be seismic. Thus an epicenter in this area is not surprising

HYDROGRAPHIC DETAIL:	One, unnamed, major river flows in a U-shaped East-West trending valley through the south part of the 25 km area. The epicenter is on the west side of a river tributary to the unnamed river. Lake Sarezskoye lies south of the 25 km area. No changes in drainage were recognized.
NUMBER & TYPE OF MINES:	None
NATURE & LENGTH OF ROADS:	Trails, subject to floods and landslides, run along the major valleys.
EVIDENCE OF DRILLING:	None
SIZE OF CITY OR TOWN:	None. A wild inhospitable remote area.
MILITARY INSTALLATIONS:	None
MISCELLANEOUS FEATURES:	
UNUSUAL BUILDINGS:	None
FENCED-IN AREAS:	None
EXCAVATIONS:	None
DISCUSSIONS:	Epicenter is in remote isolated high mountain country. [redacted] cluded there is no visible evidence of nuclear testing.

25X1B

25X1B

EPICENTER: 52

DATE: 12 Feb 64

COORDINATES: 39-18N/55-42E (39.30N - 55.70E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The mountain front is along a major shear zone. In the area of interest the mountain front is a fault-line scarp. The fault can be traced for some 50 miles (the shear zone can be traced for several hundred miles). The fault separates folded sandstones, shales and limestones in the mountain from recent unconsolidated sediments in the plain. Forth km to the SE of the epicenter the fault-line scarp cuts alluvium, suggesting geologically quite recent movement along the fault.
Small faults in the mountains cut the folded sediments at directions of about 60° to the major fault-line scarp.
Terrain: the epicenter is about 28 miles SE of the meandering Uzboy River; it is about 7 miles east of the mountain front in a broad alluvial plain. The relief in the area is about 1,500 feet.
Hydrology: Depth to ground water is probably on the order of 100 feet or less.
Discussion: As the plotted epicenter is about 7 miles from the recent fault-line scarp the occurrence of a natural seismic event in this area is not unexpected.

HYDROGRAPHIC DETAIL: Only widely spaced intermittent streams which occasionally carry water to sinks (playas).

NUMBER & TYPE OF MINES: None

NATURE & LENGTH OF ROADS:	A main gravelled road more or less parallels the railway. Transverse trails lead north into the sandy wastes and south into the rough mountains.
EVIDENCE OF DRILLING ACTIVITY:	None
SIZE OF CITY OR TOWN:	Kazandzhik is estimated to have about 5,000 inhabitants.
MILITARY INSTALLATIONS:	SAM Site north of Kazandzhik.
MISCELLANEOUS FEATURES:	An army barracks and training area located on west edge of Kazandzhik, shows no apparent change during the period before and after the event.
UNUSUAL BUILDINGS:	None
FENCED-IN AREAS:	None
EXCAVATIONS:	None

DISCUSSIONS:

[redacted] shows additional shallow sink holes have been formed by subsidence, channels of small anastomosing streams have been deepened indicative of a slight uplift. No test circles, craters, spoil, instrumental cable trenches, mine shafts or adits (tunnels), or wells observed. No roads or trails are to be seen in the epicenter area, a sandy sloping waste. Foregoing evidence seems to indicate this to have been a natural event.

25X1D

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EPICENTER: 129

DATE: 9 Apr 64

COORDINATES: 51-00N 92-06E (51.00N - 92.10E)

COVERAGE, Pre-Event:
Post-Event:

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

25X1D

[redacted]

LOCAL GEOLOGY & TERRAIN:

25X1D

Geology: Photographs c[redacted] are cloud covered over the epicenter; in [redacted] photographs the epicenter is snow covered. Area is underlain by sandstones and shales that are only gently to moderately folded; roughly east strikes are visible. Stream patterns indicate a N.50 - 60 W fault system, and a less important N.60 - 70 E fault system. A geologically recent E-W fault line scarp is 25 km south of the epicenter point. The fault line scarp, however, does not cut alluvium.
Terrain: The epicenter is in an area of low mountains. Stream valleys are narrow and V-shaped. South of the 25 km radius are plains that border Ubsa-Nuur. The relief in the area is a little over 1,000 feet. There is some farming outside the area to the east.
Soils: Soils are probably thin except along south forming slopes that have tree and brush cover and in valley bottoms. Many slopes are either grass covered or barren.
Hydrology: Depth to water is probably less than 25 feet in valleys; more than 100 feet in the mountains.
Discussion: The area is known to be seismic. Except for the scarp, 25 km south of the epicenter, there is no striking sign of geologically recent faulting.

HYDROGRAPHIC DETAIL:

Several minor streams have headwaters in the 25 km area; these radiate out from the area in all directions. The Chadana, which flows north and the Hundagaita, which flows south into Ubsa Lake are the largest of these streams. There were no visible changes in these streams (much of the area was cloud-covered in pre-event photographs).

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NUMBER & TYPE OF MINES: None

NATURE & LENGTH OF ROADS: One NW-SE secondary type road passes along W side of area Ubsa-Nuur (lake) to the Enisei River valley. No branches from this road into epicenter. Many small farm roads run out into pastures in the northern and southern boundaries of search area.

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: None in search area.

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES:

UNUSUAL FEATURES: None

FENCED-IN AREAS: None

EXCAVATIONS: None

25X1B

25X1B [redacted] There is no visible evidence of nuclear testing.

EPICENTER: 78

DATE: 29 Feb 1964

COORDINATES: 53-24N 91-12E (53.40N - 91.20E)

COVERAGE, Per-Event: [redacted]
Post-Event: 25X1D

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The uplands north of the Abakan River are composed of steeply dipping folded sedimentary rocks. Two ages of rocks are shown by an unconformity. The lowland divided probably is composed of largely the older, and probably harder, of the two rock units, as the bedding trends of the older unit can be traced from the mountains to the lowlands. A small granite intrusive is exposed about 10 miles SW of the epicenter coordinates. Minor faulting can be recognized in the area but there is no evidence of geologically recent movement.
Terrain: The epicenter is about 6 miles SE of Abakan River on the low divided between the Abakan and Yenisey Rivers. The lowland divided between the rivers has about 300 feet of relief in this area, and is extensively farmed. North of the Abakan River isolated hills and low mountains rise to about 1,000 feet above the river valley.
Soils: The alluvium beneath the Abakan flood-plain probably is less than 100 feet thick and is saturated with ground water. Soils on the lowland divide are much thinner, well drained and more extensively planted in row crops than used for pasture. Numerous rock outcrops are present
Hydrology: The water table is nearly at the surface beneath the Abakan River flood plain, within 25 to 100 feet of the surface beneath the lowland divide, and probably more than 100 feet beneath the surface in most of the upland area.
Discussion: There is no obvious geological agent which might indicate a natural seismic event within the 25 km radius area. The post-event photography is snow-covered and shows very little geological detail.

HYDROGRAPHY: The major river of the 25 km area is the Abakan that joins the Yenisey just outside the area. There are several small lakes on the low divide between the Abakan and Yenisey Rivers. There were no visible changes in post-event photos.

NUMBER & TYPE OF MINES: One open pit coal mine at 53°34'N 91°20'E, was actively mining during the interval between the two missions.

NATURE & LENGTH OF ROADS: Numerous secondary roads cross the area in all directions serving the small farm towns. North-south roads cross the area (50 kilometers), east-west roads connect towns.

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: Numerous country towns, ranging up to 300 dwellings, but generally 70 to 150 houses.

MILITARY INSTALLATIONS: None observed.

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN-AREAS: A number of such areas are noted, particularly near barns and hamlets, probably for coralling livestock.

EXCAVATIONS: Small open pit coal mine NE of epicenter. Numerous small excavations for stock ponds.

Discussion: There is no evidence of nuclear testing in the area. An open pit coal mine north of the epicenter has expanded considerably its operations. A number of little used farm trails cross the area. The area is under cultivation.

25X1B

25X1B

[redacted]

evidence indicates epicenter is over a natural event.

EPICENTER: 155

DATE: 28 April 64

COORDINATES: 37-54N 71-54E (37.90N - 71.90E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: Pre- and post-event photos show snow cover except in the two valleys. No useful comments on bedding atitudes and rock types can be made from these photos. Alignment of valleys in the mountain range suggest a north-striking fault system. A major west-striking system is known to exist in the region.
Terrain: The epicenter is on the north flank of the Rushanskiy range. The 25 km area contains major ice fields and glaciers. Two major unnamed rivers lie in large U-shaped valleys bounding the area on the south, west, and northwest. Relief in the area reaches 13,000 feet.
Soils: Soils on the mountains are thin and coarse where present in minor valleys. Soil in the large river valleys is probably over 100 feet thick. Large alluvial fans are not common in this area as they are in the epicenter areas to the east.
Hydrology: Depth to ground water in the two large river valleys is probably less than 10 feet. Water is restricted to valley fill and fracture zones in the mountains.
Discussion: The area is known to be seismic; however, there is no obvious geologic agent for a natural event in the area.

HYDROGRAPHIC DETAIL:

The 25 km area includes the glaciers of the Rushanskiy range. Melt waters goes south to a major, unnamed river that flows into the Ab-i-Panja River (a tributary of the Amu Darya). Melt waters go north to a major, unnamed, river that also flows into the Ab-i-Panja River.

SIZE OF CITY OR TOWN: None

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN-AREA: None

EXCAVATIONS: None

DISCUSSION: Epicenter is in remote isolated high-mountain country. [redacted]

25X1B

25X1B

[redacted] observed. It may be concluded there is no visible evidence of nuclear testing.

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Enc to TCS-9895-65

EPICENTER: 111

DATE: 22 Mar 64

COORDINATES: 40-30N 69-36E (40.50N - 69.60E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The mountains are composed of metamorphosed sedimentary and igneous rocks. Some large dikes and granitic intrusives are present. There is a complex pattern of east-trending faults in the mountains; and the mountain front just north of the epicenter is along a fault-line scarp. However there is no evidence of very recent fault movement along the mountain front. West of the epicenter the Syr Darya plain is underlain by recent alluvium to an unknown but probably great depth.
Terrain: Epicenter is on a large slightly dissected alluvial fan, covered with hay (?) fields about 2 miles from the front of the mountains. Epicenter elevation is about 2,500 feet. The mountain range reaches 8,000 feet. A lower range of mountains 5 miles to the south reaches 4,5000 feet in elevation. The Syr Darya plain is 25 km due West. It is covered with crops to the very foot of the mountains.
Soils: Soils are very thin or absent in the mountains except for alluvium in gulley bottoms. Soils on the alluvial fans are probably well over 100 feet thick and are sandy and well drained.
Hydrography: The water table in Syr Darya Valley probably is 100 feet or more deep. On the alluvial fans the water table is probably deeper than the alluvium.

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Discussion: The area is known to be tectonically active and a number of large faults are present. A natural seismic event would not be unexpected in this area. Several large mines are in the mountains north of the epicenter, and at least one of the mines has been abandoned. These mines probably could be modified for testing with only negligible or no surface indications thus a seismic event in this area must be considered as suspicious.

HYDROGRAPHY DETAIL: This is in an arid region and the 25km area contains no large rivers. In the north part of the area the small intermittent streams reach the Syr Darya Valley but do not reach the river. Intermittent streams in part of the area do reach the Syr Darya. There is a large dammed lake just to the southeast of the area.

NUMBER & TYPE OF MINES: Epicenter is in the center of an extensive nonferrous metal mining and milling region. Seven separate mining and milling districts can be recognized, each district comprising numerous mines. The mines vary greatly in size from a small old open pit N of Takeli 40°30'N 69°25'E to new large open pits at Taboshar uranium mining district 40°36'N 69°38'E and the Altyn Topkan copper-zinc mining district 40°38'N 69°37'E. Underground (shaft) mines are also present, there being deep mines at Taboshar. Approximately 18 combination small open pit or adit (tunnel) mines linked by roads to Kansay copper-zinc mining district are located 4-6 kilometers or 2-3 nm E of the epicenter.

NATURE & LENGTH OF ROADS: The area is well served by roads. The N-S roads, linking Leninabad with the Almalyk copper district as well as the mining districts are paved. Secondary gravel roads link the mining districts in the E-W direction. Heavy grades and numerous sharp turns are encountered in the mountainous regions.

EVIDENCE OF DRILLING ACTIVITY: Where seen between the heavy clouds, tertiary type gravel roads running out to scarred sites around the mining districts indicates that random drilling programs are in progress. Further the enlarged dumps of waste rock and mill tailings indicates that mining and milling has continued and that more ore must be found by drilling. No drilling is seen at the epicenter prior to the event. Photography taken after the event shows the epicenter to be cloud covered but no drilling can be seen in the cloud-free area adjoining the epicenter.

SIZE OF CITY OR TOWN: Leninabad is a large city of several hundred thousand inhabitants. The mining towns have upwards of several tens of thousands of inhabitants, the largest being Taboshar. No town is located at or immediately adjoining the epicenter.

MILITARY INSTALLATIONS: Extensive administration, supply, and quartering facilities are available at Leninabad and Ispisar to the SE, the latter also with an airfield being located just outside the search area.

MISCELLANEOUS FEATURES: A new and large reservoir on the Syr Darya River was being filled with run off from spring freshets in the mountains and melting snow water the day of the event, 22 March 1964. The water has provided an additional load on the already weakened earth's crust at the restricted entrance to Fergana Valley. The event could have been triggered by an adjustment to this load of new water as near as 31 kilometers of $16\frac{1}{2}$ nm SE of the epicenter.

UNUSUAL BUILDINGS: None at the epicenter. Mining and milling districts have specialized buildings of unknown significance to the event.

FENCED-IN-AREAS: Mining explosives are stored in isolated enclosed areas near the mines.

EXCAVATIONS: None at the epicenter. Extensive open pit mining is discussed above.

DISCUSSION: There is no evidence of nuclear testing. No

25X1B [redacted]

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EPICENTER: 378

DATE: 6 Oct 64

COORDINATES: 40-18N/53-36E (40.30N - 53.60E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The dissected area is underlain by flat-lying limestones, sandstones and shales and some stabilized dunes. The valley is underlain by only a thin layer of alluvium. The most notable feature is a light colored circle about 1½ miles in diameter on the east edge of the valley. This might be the basin of a small, ephemeral lake, a large sink, or an area of grazing around a well. Roads and trails converge on the area and there are signs of recent orderly arranged habitation.

Terrain: The maximum relief in the area is about 200 feet. The higher portions of this area are slightly dissected, soft, thin sediments. The west, and lower part of the area is a broad shadow valley. Dunes and what may be remnants of old shorelines are present in the north part of the area.

Soils: The soils are probably thin, sandy and saline.

Hydrology: The area is dry and depth to ground water is probably over 100 feet.

Discussion: The light colored round area could be a small playa or a water well site. The

25X1B

[redacted]

In any event there is no obvious geologic agent for the production of a natural seismic event.

HYDROGRAPHIC DETAIL: The area is dry and depth to ground water is probably over 100 feet.

NUMBER & TYPE OF MINES: None. A drilling rig was set up near the tent camp as seen on [redacted] photography.

25X1D

NATURE & LENGTH OF ROADS: Secondary gravelled road runs E-W south of the epicenter area. Transverse occasional caravan trails.

EVIDENCE OF DRILLING: None

SIZES OF CITY OR TOWN: None. See section on HYDROGRAPHIC DETAIL for description of camp site.

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSION:

25X1B

[redacted]

observed. Accordingly it may be concluded there is no visible evidence of nuclear testing.

EPICENTER: 404

DATE: 24 Oct 64

COORDINATES: 65-42N 14[illegible]-4E (65.70N - 145.40E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: Gently to moderately dipping sedimentary or metamorphic beds can be recognized through snow cover on some valley walls. One cinder cone is north of the Moma River and volcanic rocks are presumable present in the Moma valley alluvium. Sets of river terraces confuse the evidence but fault-line scarps striking about N 10 W are probably in the 25 km area and certainly are present to the north out of the area.

Terrain: The epicenter is in a mountain area about 30 km south of the Moma River. Maximum relief in this area is about 3,000 feet. The mountains have been glaciated and big U-shaped valleys and old cirques are cut by younger cirques.

Soils: In the 25 km area soils are probably thin and stoney. Alluvium in the tributary valley immediately adjacent to the epicenter is probably 100-[illegible]00 feet thick.

Hydrology: The area is in the permafrost zone. Depth to ice or water table in the tributary valley probably ranges from 10 to over 100 feet. Depth to the water table or ice, in the mountains is probably less than 100 feet.

Discussion: The area is known to be seismic. The existence of a cinder cone within 50 km and probable fault-line scarps within the 25 km radius area suggest a probable natural cause for a seismic event. The superimposed part of the Moma also shows this is a tectonically active area.

HYDROGRAPHIC DETAIL:	The Moma river passes through the 25 km area from SE to NW. In the central part of the area the Moma valley has been superimposed on the mountains (i.e., these mountains are now rising). On either side of the central part of the mountains the Moma meanders in a wide, swampy valley. Large streams enter the Moma River from both north and south in U-shaped valleys. There were no visible changes in streams.
NUMBER & TYPE OF MINES:	May be a small amount of occasional panning of stream gravels for gold.
NATURE & LENGTH OF ROADS:	Trails are barely visible along some of the rivers.
EVIDENCE OF DRILLING ACTIVITY:	None
SIZE OF CITY OR TOWN:	Nearest settlement is Khomu, 90 nm (130 km) NW consisting of about 150 dwellings.
MILITARY INSTALLATIONS:	None
MISCELLANEOUS FEATURES:	
UNUSUAL BUILDINGS:	None
FENCED-IN AREAS:	None
EXCAVATIONS:	None

25X1B

[redacted]

cluded there is no visible evidence of nuclear testing.

EPICENTER: 562

DATE: 2 Dec 64

COORDINATES: 39-05N 70-42E (39.10N - 70.70E)

COVERAGE, Pre-Event: 25X1D
Post-Event:

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The area is covered by light snow in pre-shot photographs and by heavy snow in post-shot photography. Steeply dipping beds or joints are present but formations and contacts are obscured by snow. East and N. 10 to 20 W. trending major valleys suggest 2 fault systems. Though there seems good evidence for sizeable faults there is no evidence for recent fault movement. The alluvial fans in the Muksu valley are, however, being dissected which might indicate recent general uplift of the area.
Terrain: The epicenter is on a ridge on the east side of a glacier and about 3 miles S of the Muksu Valley. The surrounding mountains are glaciated and snow covered.
Soils: Soils do not exist in the mountains. Soils in the tributary valleys are thin and very coarse. Soils in the Muksu Valley alluvium are thick and probably course.
Hydrology: In the Muksu Valley depth to ground water is probably less than 10 feet. There is no ground water table in the mountains.
Discussion: This is a seismic region and an nuclear test is improbable because of the lack of a vehicle road in the area.

HYDROGRAPHIC DETAIL:

The Muksu River passes through the center of the 25 km area. It occupies a wide U-shaped valley. Tributaries to the Muksu from the south are fed by glaciers; tributaries from the north are minor spring-fed streams. There were no visible differences in pre- and post-event photographs.

NUMBER & TYPE OF MINES:	None
EVIDENCE OF DRILLING ACTIVITY:	None
SIZE OF CITY OR TOWN:	None. A remote, wild, inhospitable part of the USSR
MILITARY INSTALLATIONS:	None
MISCELLANEOUS FEATURES:	
UNUSUAL BUILDINGS:	None
FENCED-IN AREAS:	None
EXCAVATIONS:	None

Discussion: Epicenter is located in remote isolated seismically active high mountain country served by the merest trails. [redacted]

25X1B

25X1B

[redacted]

concluded that there is no visible evidence of nuclear testing.

EPICENTER: 222

DATE: 19 Jun 64

COORDINATES: 65-06N/149-12E (65.10N - 149.20E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: Snow cover prevents any useful geological interpretation.
Terrain: Pre- and post-shot photographs show snow cover. The epicenter is in maturely dissected mountains 15 miles (statute) west of the west edge of the Kolyma river flood plain. Relief in the epicenter area reaches 3,000 feet.
Soils: No comments.
Hydrology: Depth to ground water in the Kolyma flood plain and in mountain valleys is probably less than 10 feet. This is in the permafrost region.
Discussion: Would need different photographs or collateral to discuss this epicenter.

HYDROGRAPHIC DETAIL:

The major river of the 25 km radius area is the Rassokha, a tributary of the Kolyma. Two streams enter the Rassokha from the north on either side of the 25 km area. There was no visible change in these or smaller streams in post-event photographs.

NUMBER & TYPE OF MINES:

May be a small amount of occasional panning of stream gravels for gold. No visible mines.

NATURE & LENGTH OF ROADS:

None

EVIDENCE OF DRILLING ACTIVITY:

None

SIZE OF CITY OR TOWN: None. A remote, wild, inhospitable part of the USSR.

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSIONS:

25X1B [redacted] there is no visible evidence of nuclear testing.

EPICENTER: 178

DATE: 19 May 1964

COORDINATES: 38-30N 73-30E (38.50N - 73.50E)

PHOTOGRAPHY: Pre-Event:
Post-Event:

QUALITY & NATURE OF PHOTOGRAPHY:
Pre-Event:

Post-Event:

25X1D

[redacted]

LOCAL GEOLOGY & TERRAIN:

Geology: Bare rock is exposed in a very few south facing cliffs (post-event photography), steeply dipping beds, or joints can be recognized but no other geologic details. Pre-event photography is cloud covered in the 25 km area. The rectilinear pattern of cirques and valleys and the shape of Lake Sarezkoye to the SW of the epicenter suggests fault or joint control, though faults cannot be recognized with certainty N 10 E N 20W, striking fault systems are probably present. The epicenter is about 1 mile West of a valley that may follow a N 10 E striking fault. There is no visible evidence for recent faulting.
Terrain: Epicenter is on a glacier. Surrounding mountains are glaciated and snow covered. Relief in the 25 km radius area is several thousand feet. The mountains are formed by intersecting cirques.
Soils: Same as Epicenter 005.
Hydrography: Same as Epicenter 005.
Discussion: There area is seismic and a natural event in the area is not surprising. Secret testing in the area, at present, would be precluded by the absence of roads.

HYDROGRAPHY DETAIL:

The 25 km area centers in the Muzkol mountain mass and the streams are all glaciers fed. The Murgab River runs in an east-west direction on the south side of the 25 km area. There were no visible changes in drainage.

NUMBER AND NATURE OF MINES: No mines visible.

NATURE AND LENGTH OF ROADS: N-S trail, dirt or gravel surface, E side of epicenter search area. No roads near epicenter.

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: None

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

Discussion: Epicenter is located in remote isloated high mountain country served by the merest trails. [redacted]

25X1B

25X1B

[redacted]

be concluded there is no visible evidence of nuclear testing.

Handle Via
Talent-KEYHOLE
Control System Only

TOP SECRET RUFF

Enc to TCS-9896-65

EPICENTER: 32

DATE: 26 Jan 64

COORDINATES: 54-24N/158-18E (54.400N - 158.300E)

COVERAGE, Pre-Event: 25X1D
Post-Event:

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:
Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The epicenter is adjacent to a low range of mountains that contains a number of small eroded cones. This range and the mountains on the west side of the Kamchatka Valley are composed of volcanic ash and flows. Recent fault line scarps strike about N. 10° W. in the area.
Terrain: The epicenter is on the east side of the 15 km wide Kamchatka River flood plain. Epicenter 295 is 30 km S 65 E. The mountains east and west of the epicenter reach 3,000 to 4,000 feet.
Soils: Soils in the mountains are thin or absent. Alluvium in the valley is probably several hundred feet thick.
Hydrology: It is less than 10 feet to the water table in the river valley. The water table in the adjacent mountains is probably less than 100 feet deep.
Discussion: The faults and small volcanic cones provide agents for a natural seismic event in this 25 km area.

HYDROGRAPHIC DETAIL:

There are no large bodies of water in the area. The Kamchatka River flows through the area from SW to NE in the valley between the mountain ranges, Vallaghiskiy Khrebet and Sredinnyy Khrebet. Intermittent streams from these mountain ranges flow into the Kamchatka River.

NUMBER & TYPES OF MINES:

None

TOP SECRET RUFF

Handle Via
Talent-KEYHOLE
Control System Only

NATURE & LENGTH OF ROADS: Only one main road traverses the area from SW to NE and it follows the general course of the Kamchatka River. This apparently unsurfaced, crushed rock road connects the cities of Petropavlovsk, approximately 75 nm south, and Ust'Bol'Sherek approximately 120 nm SW, with Klyuchi about 138 nm NE of the epicenter. Within the area there are no roads branching off the main road. The few trails that branch off the main road lead to areas under cultivation and forests where local villagers have apparently gathered wood for fuel. Sometime after the event, the construction of a road by-passing Sheromy has been started and by [redacted] a section of approximately 5 km has been cleared of trees but grading of it had not been started.

25X1D

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: There are only two villages in the area. The largest is Sheromy, approximately 5 km west of the epicenter. It consists of about 60 dwellings and six large buildings apparently part of communal farm. The village of Sheromy has not changed and only 3 new dwellings have been constructed in the period between the pre-event and post-event photography. The other village is Krasnoye Znamya about 21 km SW of the epicenter and consists of about 5 farm dwellings.

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES -

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSION: There is no evidence of nuclear testing in the area. A study of pre- and post-event photography revealed no change in the cultural and topographic features in the area. [redacted]

25X1B

25X1B

[redacted]

Handle Via
Talent-KEYHOLE
Control System Only

TOP SECRET RUFF

Enc to TCS-9895-65

EPICENTER: 198

DATE: 31 May 64

COORDINATES: 56-12N/160-48E (56.200N - 160.800E)

COVERAGE: Pre-Event: [redacted]
Post-Event:

25X1D

QUALITY & EXTENT OF COVERAGE:
Pre-Event:
Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The 25 km area includes parts of two major active volcanoes and a flood plain. The slopes of the volcanoes are composed of a mixture of ash and basalt flows. A number of subsidiary cones are present on the flanks of the large volcano. The epicenter is about 1 km north of a major fault delineated by an alignment of several of these small cones. Alluvium is probably several hundred feet thick in the Kamchatka River flood plain.

Terrain: The epicenter is on the northeast flank of the Gora Klyuchevskaya Sopka. The south flank of the Kharchinskiy Volcano just north lies in the 25 km area as does part of the broad flood plain of the Kamchatka River. Maximum relief is about 13,000 feet. The slopes of the volcanoes are cut by a large number of dry stream channels and interstream micro-relief is rough.

Soils: Soil on the large volcanoes is thin or absent. Alluvium in the flood plain is probably several hundred feet thick.

Hydrology: Depth to ground water on the volcanoes is probably considerably more than 100 feet. Depth to ground water on the flood plain is less than 10 feet.

Discussion: This is a highly seismic region. The epicenter area is on the flank of a major active volcano. The epicenter point is near to a major recent fault. A natural explanation for the event is not unexpected.

TOP SECRET RUFF

Handle Via
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HYDROGRAPHIC DETAIL:

The largest body of water within the area is Lake Kurazhechnoye covering an area of approximately 10 square miles, about 16 km NE of the epicenter. There are at least 19 other smaller lakes within the area, all NE, N and NW of the epicenter and located in a swampy area along the northern bank of the Kamchatka River which flows from west to east across the northern half of the area. Other than the Kamchatka River there are only intermittent streams originating on the nearby snow-covered volcanic mountains.

NUMBER & TYPES OF MINES:

None

NATURE & LENGTH OF ROADS:

Other than the streets within the only community in the area, Klyuchi, there are no surfaced roads. Narrow crushed-rock roads and trails lead in all 4 directions from Klyuchi. However, there are no bridges across the Kamchatka River and nearby small streams and access to the community from some towns to the east and north is possible only by ferry.

EVIDENCE OF DRILLING ACTIVITY:

None

SIZE OF CITY OR TOWN:

The only community within the area is Klyuchi, approximately 13 km north of the epicenter. It covers an area of approximately 5 square miles and is primarily a lumber town with nearby military installations serving as a major control and instrumentation center for the Tyuratam-Kamchatka Missile Test Range.

MILITARY INSTALLATIONS:

A communication center of the Tyuratam Missile Test Range - Kamchatka Impact area is located on the south edge of the town and about 12 km north of the epicenter. It consists of a large number of rhombic antennas in two areas, control buildings, support buildings, a helicopter landing area, an airstrip and a large housing and barracks area. An airstrip with an apparently unserviceable runway of 5,600 feet and an electronic facility are located approximately 16 km NE of the epicenter.

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS:

No unusual buildings in the area. A possible seaplane station is located about 3 km NE of Klyuchi on Lake Kurazhechnoye.

FENCED-IN AREAS: Only the military installations noted above appear to be secured.

EXCAVATIONS: No evidence of any excavations.

DISCUSSION: A study of the pre- and post-event photography revealed no changes in the topographic and cultural features in the area. There appear to be no roads leading to secluded areas and no installations, equipment, or activity of the type that could be associated with pre- or post-nuclear testing. No sinks or craters are observed in the area. The apparent lack of any features associated with a nuclear event precludes the possibility of nuclear testing being conducted in the area.

Handle Via
Talent-KEYHOLE
Control System Only

TOP SECRET RUFF

Enc to TCS-9895-65

EPICENTER: 243

DATE: 6 Jul 64

COORDINATES: 52-54N/157-30E (52.900N - 157.500E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The mountains have been glaciated and are underlain by volcanic rocks; the river valleys are underlain by deep alluvium. There are a number of small, recent volcanic cones in the 25 km area. The pre-event photos show snow covered ground are also snow covered; however N. 10 to 20°E. striking faults can be recognized.
Terrain: The 25 km on low rolling mountains north Apacha. The 25 km area includes the wide valleys of the Plotnikova, Apacha, Karymchina rivers and low rolling between tne northeast of these rivers.
Soils: Soils in the mountains are probably over two feet thick, alluvium in the valleys may be over 100 feet thick.
Hydrology: Depth to ground water in mountain is probably less than 100 feet. Depth to ground water in the valleys is probably less than 10 feet.
Discussion: A 2-lane road passes through the western edge of the 25 km area. The village of Apacha is just outside the area. There are snow covered roads or trails in the epicenter area that connect with roads leading west from Garatynka. These roads and trails are snow-covered in post-event photos. The area is tectonically active thus a natural event is not surprising. There are however, culture features that suggest examination of the area without snow cover would be desirable.

NUMBER & TYPE OF MINES: None

NATURE & LENGTH OF ROADS:	Secondary roads and trails which generally follow east-west streams, across the search area.
EVIDENCE OF DRILLING:	None
SIZE OF CITY OR TOWN:	None
MILITARY INSTALLATIONS	None
MISCELLANEOUS FEATURES -	
UNUSUAL BUILDINGS:	None
FENCED-IN AREAS:	Small pastoral corral in the epicenter area.
EXCAVATIONS:	None

DISCUSSION: There are numerous trails in the area and what appears to be a secondary, crushed-rock road, and in addition support facilities could be available at Petropavlovsk, approximately 41 nm east of the epicenter. However, there is no evidence of any equipment, facilities and activities which can be associated with a pre- or post-nuclear event. A study of the pre- and post-event photography revealed no changes in the topographic and cultural features of the area. It is therefore unlikely that a nuclear test has been conducted in the area.

EPICENTER: 270

DATE: 25 Jul 64

COORDINATES: 56-24N/161-42E (56.400N - 161.700E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

QUALITY & EXTENT OF COVERAGE:
Pre-Event:
Post-Event:

[redacted]

LOCAL GEOLOGY & TERRAIN:

Geology: Rock exposures in immediate vicinity are confined to Kumroch Range. Rock types probably consist of slightly metamorphased, highly folded, predominantly hard volcanic rocks, coarse-grained sandstone, chest and silicified shale. Soils consist of thick, poorly drained alluvium in valley of Raduga River, small alluvia fans at base of mountain front, and thin rocky soils in Kumroch Range. Epicenter is located on major northeast-southwest trending fault which bounds the west side of the mountains. Upward movement of mountain block within geologically recent time is indicated by abrupt steepening of gradient of many tributary valleys just before they reach the valley floor. Location of epicenter on major fault strongly suggests that shock resulted from earthquake caused by movement along the fault.

Terrain: At base of steep northwest front of Kumroch Range, near junction of large tributary with Raduga River. The Raduga River meanders in a wide valley that parallels the mountain front. The valley elevation is below 1,000 feet, local relief probably amounts to about 1,000 feet.

HYDROGRAPHIC DETAIL:

The largest body of water, Lake Azhabachye, covering an area of approximately 24 square miles, is located almost exactly 25 km SSE of the epicenter. There are 5 other smaller lakes SW of the epicenter in the swampy area along the banks of the Kamchatka River which flows from west to east across the southern portion of the area 25 km radius around the epicenter. Other than the Kamchatka River there are some intermittent mountain streams in the area.

NUMBER & TYPES OF MINES:

None observed.

NATURE & LENGTH OF ROADS: An unsurfaced road that connects villages along the Kamchatka River passes across the southern half of the area.

EVIDENCE OF DRILLING ACTIVITY: None observed

SIZE OF CITY OR TOWN: The nearest village, Komaki, is approximately 16 km SW of the epicenter and consists of about 34 dwellings and no industrial installations. It is situated on the northern bank of the Kamchatka River. Access to the village from the south is possible only by ferry since there are no bridges across the river. There are two small villages immediately SE of the epicenter just outside the 25 km limit. None of the villages appear to have been recently expanded and apparently could not provide housing for an influx of personnel.

MILITARY INSTALLATIONS -

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSION: A study of pre- and post-event photography revealed no changes in the topographic and cultural features in the area. There appear to be no roads leading to secluded areas and no equipment, installations, facilities or activity that could be associated with either a pre- or post-nuclear event are evident. The apparent lack of these features makes it unlikely that a nuclear test has been conducted in the area.

EPICENTER: 295

DATE: 13 Aug 64

COORDINATES: 54-18N/158-48E (54.300N - 158.800E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The area is mainly underlain by older sediments, probably sandstone and shales. Remnants of volcanic ash and flows form flat topped mountains in the last part of the 25 km area. Older, dissected volcanic cones are north of the 25 km area. Alignment of narrow mountain valleys suggest an east-striking fault system (snow cover prevents recognition of offset formations). No cones were recognized, nor eroded remnants except on the very west edge in the area of epicenter 32.
Terrain: The epicenter is in the middle of maturely dissected mountains formed by intersecting cirques and larger U-shaped valleys. The relief exceeds 3,000 feet.
Soils: Soils are thin except in valley bottoms. Valley alluvium may reach 100 feet in depth.
Hydrology: Depth to ground water is probably less than 10 feet in valleys; less than 100 feet in the mountains.
Discussion: The general region is highly seismic. Recent faulting was not recognized near the epicenter; there are recent fault scarps on the very west edge of the area. No recent cones are in the area thus an obvious geologic agent for the production of a natural event was not recognized.

HYDROGRAPHIC DETAIL:

There are no large bodies of water in the area. The Zhupanova River, a small river fed by intermittent mountain streams, flows through the eastern half of the area from north to south. The Kavycha River, also a small river fed by intermittent mountain streams, flows through the western half of the area from south to north into the Kamchatka River about 40 km NW of the epicenter.

NUMBER & TYPE OF MINES: None

NATURE & LENGTH OF ROADS: There are no roads visible in the area.

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: There are no villages or individual dwellings nor any cultural features in the area.

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSION: A study of the pre- and post-event good quality photography revealed no evidence of changes in the topography. There are no roads or tracks in the area and apparently it has not been penetrated by motorized surface vehicles.

25X1B [redacted]

lack of any features, facilities, installations and equipment in or near the area associated with nuclear testing and post-event activities precludes the possibility of nuclear testing being conducted within the area.

Handle Via
Talent-KEYHOLE
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TOP SECRET RUFF

Enc to TCS-9895-65

EPICENTER 318

DATE: 27 Aug 64

COORDINATES: 55-48N/161-54E (55.800N - 161.900E)

COVERAGE, Pre-Event: 25X1D
Post-Event:

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: Rock types in immediate vicinity probably consist of gently dipping, moderately hard, tuffaceous sediments; also volcanic rocks, probably basalt, from at least two small volcanoes. Soil apparently thin, probably sandy and silty. Epicenter coordinates fall almost exactly on obvious fault along stream valley. Two small volcanoes are located at point where fault diverges from stream valley. Existence of a recognizable fault, associated with small volcanoes, strongly suggests shock at epicenter resulted from earth quake caused by movement along fault.
Terrain: Located on steep coast, near mount of stream, at shallow indentation of coastline.

HYDROGRAPHIC DETAIL:

The Bay of Kamchatka, N. Pacific Ocean, covers eastern half of area. There are only mountain streams in the epicenter area.

NUMBER & TYPE OF MINES:

None

NATURE & LENGTH OF ROADS:

An unsurfaced road that traverses the area connects the villages along the coast.

EVIDENCE OF DRILLING ACTIVITY:

None observed.

SIZE OF CITY OF TOWN:

Nearest inhabited place is Shubertovo, 8.5 nm NNE, a village of about 85 single family dwellings, about 4 multi-family apartments and about 17 larger buildings that probably comprise the administrative, cultural, business and welfare establishments. No new buildings have been constructed in the town in the period between the pre- and post-event photography.

MILITARY INSTALLATIONS: None

MISCELLANEOUS FEATURES -

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSION: There is no evidence of nuclear testing in the area. A study of pre- and post-event photography revealed no changes in the topographic and cultural features in the area. No roads leading to secluded areas have been observed and there is no evidence of any equipment, installation facility and activity that could be associated with a pre- or post-nuclear event. The apparent lack of these features precludes the possibility of nuclear testing being conducted in the area.

EPICENTER: 351

DATE: 18 Sep 64

COORDINATES: 53-48N/159-36E (53.800N - 159.600E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

[redacted]

LOCAL GEOLOGY & TERRAIN:

Geology: The mountain slopes are underlain by recent sediments, volcanic ash, and volcanic flows. The river valley probably contains several hundred feet of alluvium mixed with volcanic ash. The slopes south of the Zhupanova flood plain are underlain by Cretaceous sediments. A recent fault-line scarp trending N. 60° W is about 1 km north of the epicenter.

Terrain: The epicenter is 3 km north of the flood plain and delta of the Zhupanova River, on the south slope of one medium sized volcano and the east slope of another. The volcanic slopes are only slightly dissected. One subsidiary ash cone is present 5 km north of the epicenter. Relief is several thousand feet.

Soils: Soils on the volcano slopes are thin or absent. Alluvium in the Zhupanova flood plain is probably several hundred feet thick. Soils on the Cretaceous rocks are probably thin.

Hydrology: Depth to water table in the Zhupanova valley is less than 10 feet; on the volcano slopes less than 100 feet.

Discussion: The region is known to be highly seismic. A cluster of major active volcanoes, a nearby cinder cone and a recent fault-line scarp would adequately account for a natural seismic event.

HYDROGRAPHIC DETAIL: Epicenter is located about 17 km east of the Bay of Kronotskiy. Lake Karymskoye is the largest inland body of water which covers an area of approximately 16 square km and is located approximately 22 km NW of the epicenter. The Zhupanova River flows from west to east into the Bay of Kronotskiy and is located approximately 4 km SE. A large swampy area lies along both banks of the river from immediately south of the epicenter to the mouth of the river. Many intermittent mountain streams traverse the area.

NUMBER & TYPES OF MINES: None

NATURE & LENGTH OF ROADS: There appear to be no surfaced roads in the area. A narrow unsurfaced road generally follows the shoreline of the Bay of Kronotskiy and connects the village of Zhupanovskiy about 37 km NE of the epicenter with two other small settlements along the shore within the area. However there are no bridges over the intermittent streams. The village of Zhupanovo which is located about 22 km SE of the epicenter and on the southern side of the Zhupanova River can be reached from the north only by boat since there are no bridges across the river in or near the epicenter area.

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: There are only two villages in the area, Karymskaya about 21 km NE of the epicenter and Zhupanovo about 24 km SE. Karymskaya consists of about 6 native dwellings and lies about 1 km inland on Kronotskiy Bay. Zhupanovo which is situated on the Bay of Kronotskiy consists of about 25 dwellings, a possible meteorological station and radar site. The villages have not undergone changes and no new facilities have been constructed in the period between the pre- and post-event photography.

MILITARY INSTALLATIONS: A possible meteorological station and radar site are located at the village of Zhupanovo.

MISCELLANEOUS FEATURES -

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: None

EXCAVATIONS: None

DISCUSSION:

There is no evidence that a nuclear test has been conducted in the area. There apparently are no roads in the area other than the unsurfaced narrow road directly connecting small villages along the Bay of Kronotskiy, therefore the inland area has not been penetrated by any motorized surface vehicles or equipment. A study of pre- and post-event photography reveals no apparent changes in the topography of the area. In addition, there appear to be no facilities or equipment that could be associated with nuclear testing or post-event activities. This precludes the possibility of nuclear testing being conducted in the area.

EPICENTER: 466

DATE: 11 Nov 64

COORDINATES: 56-48N/161-12E (56.800N - 161.200E)

COVERAGE, Pre-Event:
Post-Event: 25X1D

[redacted]

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Terrain: Rocky piedmont slopes, elevation about 1,000 feet, on north flank of complex volcanic peak, Mt. Shiveluch, which attains elevation of 10,771 feet within 15 km.
Geology: Rock types chiefly volcanic flows of basaltic composition, with interbeds of tuff. Thin rocky soils within 5 km radius, grade into thick alluvial outwash downslope within 20 km. Indirect evidence of zone of structural weakness provided by presence within 5 km radius of a few small secondary volcanic centers, and by ridges, transverse to drainage direction, which may indicate local faulting or emplacement of dikes in zones of faulting or fracturing. No evidence of recent structural movement was observed in area.

HYDROGRAPHIC DETAIL:

Nearest large body of water is Lake Kharchinskoye about 32 km SW. There are no large rivers in the area, only intermittent mountain streams originating on a volcanic mountain, Sopka Shiveluch, the peak of which is 10,932 feet high and 9 nm distant.

NUMBER & TYPE OF MINES:

No mines have been observed in the area.

NATURE & LENGTH OF ROADS:

Narrow crushed rock roads connect the guided missile tracking station 10 km NE of the epicenter with Klyuchi approximately 30 nm SSW and distant towns near the Sea of Okhotsk on the western side of Kamchatka Peninsula, and other distant towns to the north. A road is under construction leading SE from the guided missile tracking station and there is some evidence of blasting.

EVIDENCE OF DRILLING ACTIVITY:	None observed.
SIZE OF CITY OR TOWN:	None
MILITARY INSTALLATIONS:	A guided missile tracking station is located 10 km NE of the epicenter.
MISCELLANEOUS FEATURES -	
UNUSUAL BUILDINGS:	None
FENCED-IN AREAS:	None
EXCAVATIONS:	None visible.
DISCUSSION:	There is no evidence of nuclear testing in the area nor of any preparation for future testing. Other than some progress that has been made in the construction of the road, mentioned above, as can be seen on the post-event photography, no changes are evident in the topographic or cultural features in the area. There are no roads, other than those connecting inhabited places and there are no features or activities that can be associated with nuclear testing in or near the area.

EPICENTER: 585

DATE: 17 Dec 64

COORDINATES: 56-24N/162-30E (56.400N - 162.500E)

COVERAGE, Pre-Event: [redacted]

Post-Event: 25X1D

QUALITY & EXTENT OF COVERAGE:
Pre-Event:

Post-Event:

LOCAL GEOLOGY & TERRAIN:

Geology: The exposed rock of the shore area consists of predominantly soft tuffs, shales, and sandstones. Bedding cannot be recognized and it is probable that the sediments are flat lying. The soils consist of alluvium and beach deposits that partly cover the older soft rocks. The epicenter is about 2½ miles east of a well delineated, probably minor fault. The fault is shown to be geologically quite young by its disturbance of recent bar deposits in Kamchatskiy Bay at the apparent south end of the fault, and by its displacement of geologically young rocks elsewhere.
The location of the epicenter some 3 miles away from a recent fault suggests that shock resulted from an earthquake caused by movement along the fault. The fault-epicenter relationship is, however, not as close as for epicenter 318 and 270.

Terrain: The epicenter is in the northwest corner of Nerpich'ye Lake, just offshore from a point formed by a delta at the mouth of a small river and just east of a large isolated sand bar.

HYDROGRAPHIC DETAIL:

Ref point is slightly offshore at the NW end of Lake Nerpich'ye (a salt lake) that drains into the Kamchatka Bay. The Kamchatka River empties into the Bay approximately 22 km south of ref point and the mouth of the river connects the lake and the Bay. Lake Stolbovoye, fed by mountain streams is located about 20 km NNE. There are about 6 smaller lakes within the area, all located in the SW portion.

NUMBER & TYPES OF MINES:

None observed.

NATURE & LENGTH OF ROADS: Surfaced secondary roads connect the largest town, Ust Kamchatsk, with nearby towns and installations to the west, southwest, and ferry service makes it possible to reach towns and installations to the east and northeast.

EVIDENCE OF DRILLING ACTIVITY: None

SIZE OF CITY OR TOWN: Largest town in the area is Ustkamchatsk approximately 19 km directly south of ref point. It is a complex of about 3 square miles in area and contains only minor port facilities, light industries and an airfield with a 2,400 foot long runway probably used by the civil air fleet and military forces. A probable seaplane station is located near the NE edge of the complex in the SW section of Lake Nerpich'ye. There are 9 small towns in the area, none containing more than about 200 residential buildings and a few business establishments.

MILITARY INSTALLATIONS:

1. Ustkamchatsk Barracks on the northern edge of town, secured, contains 8 large barracks and administration buildings, and numerous smaller maintenance and storage buildings.
2. An electronics facility is located on a small island 0.5 nm ENE of Ustkamchatsk and about 19 km SSE of the epicenter. No recent expansion can be observed in the above mentioned facilities.

MISCELLANEOUS FEATURES:

UNUSUAL BUILDINGS: None

FENCED-IN AREAS: Only the Military Installations noted above appear to be secured.

EXCAVATIONS: None

DISCUSSION: A study of pre- and post-event photography revealed no changes in the topographic and cultural features of the area. There apparently are no roads leading to secluded areas and no installations, equipment, facilities or activities that could be associated with a pre- or post-nuclear event were observed on the photography. The apparent lack of such features precludes the possibility of nuclear testing being conducted in the area.

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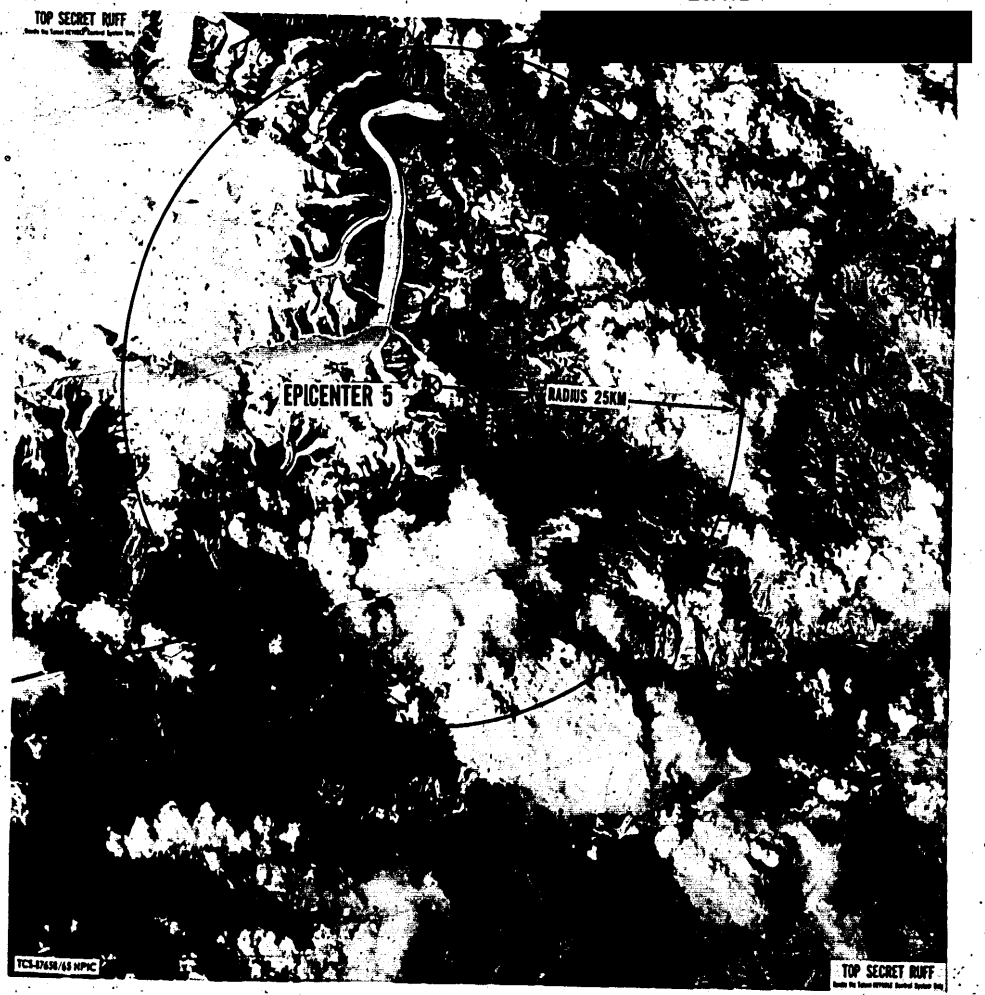

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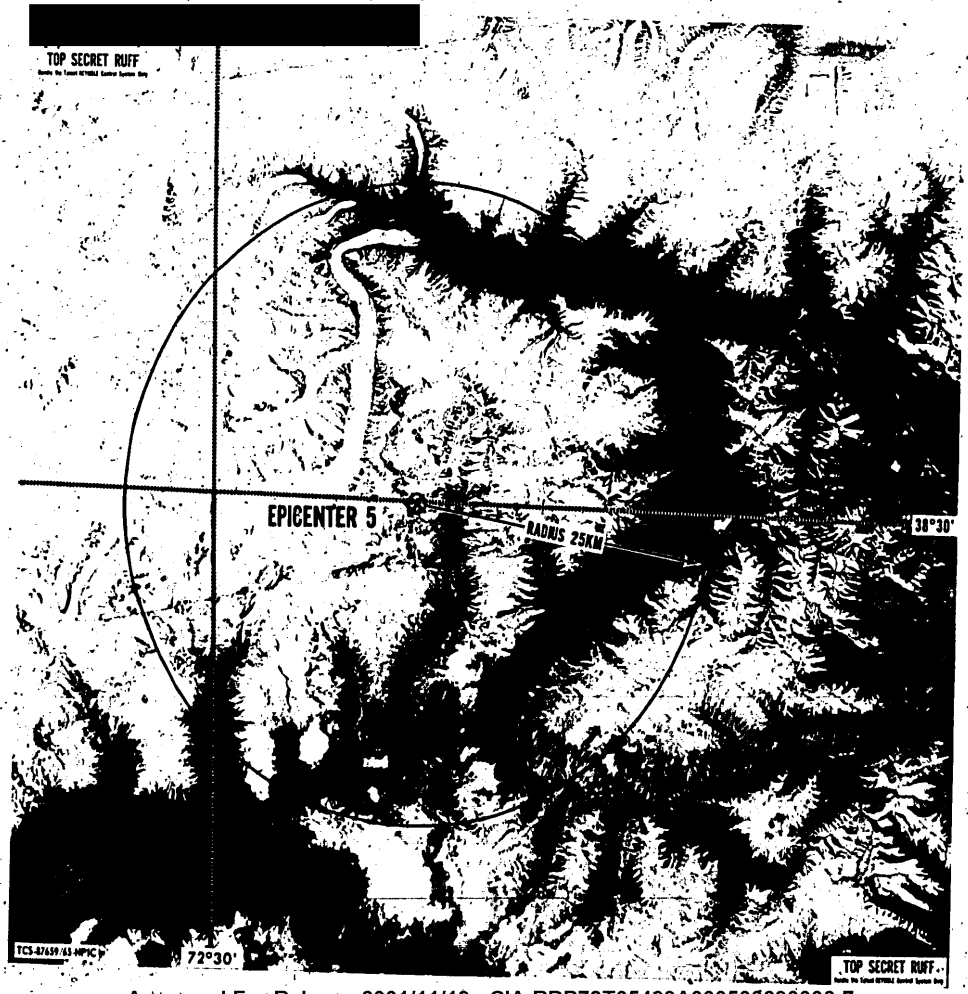

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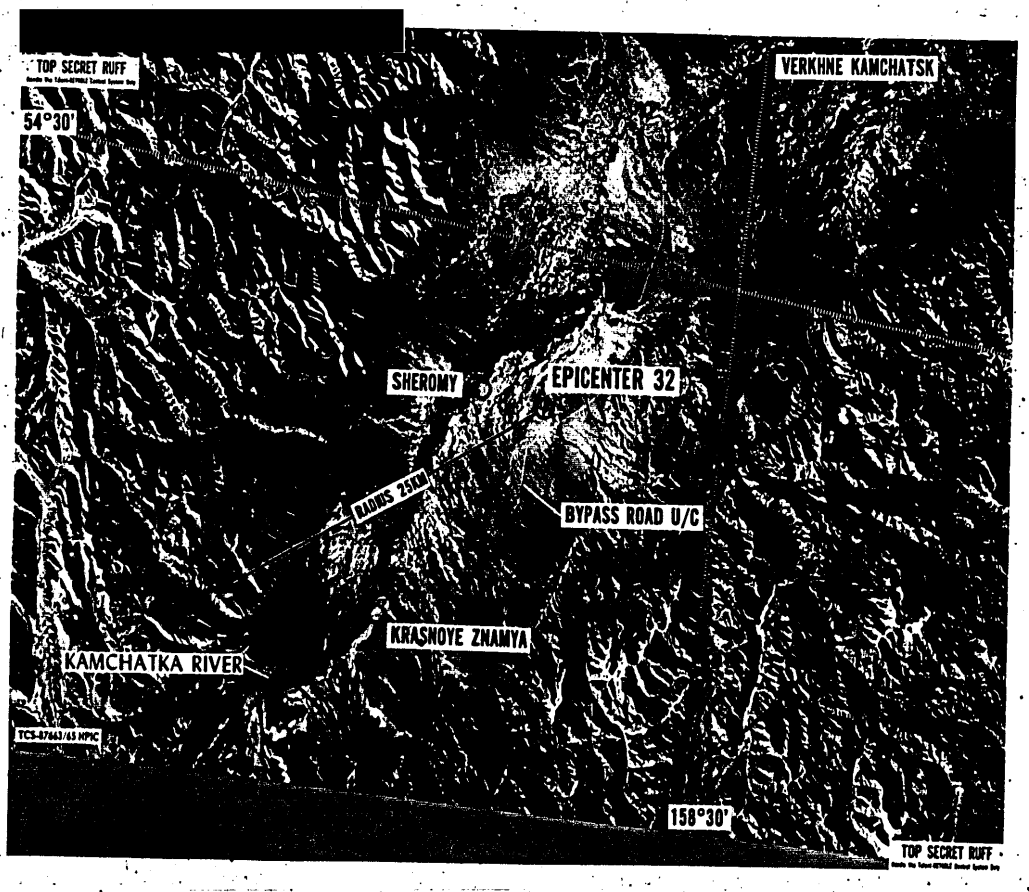

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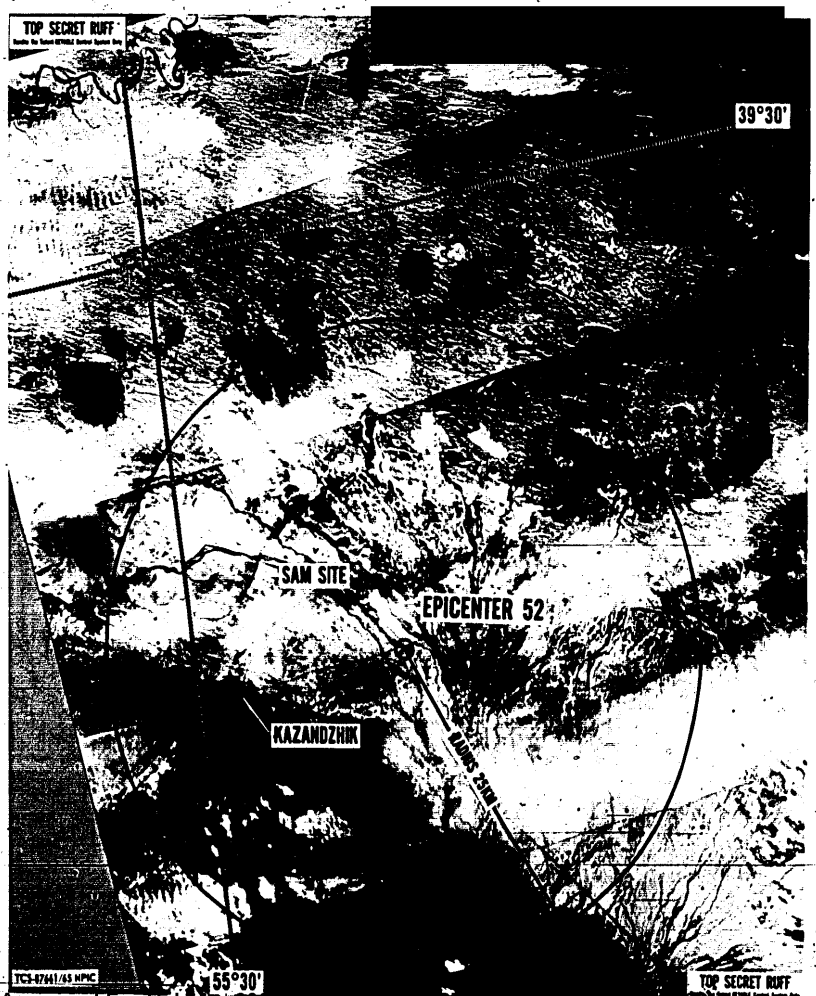

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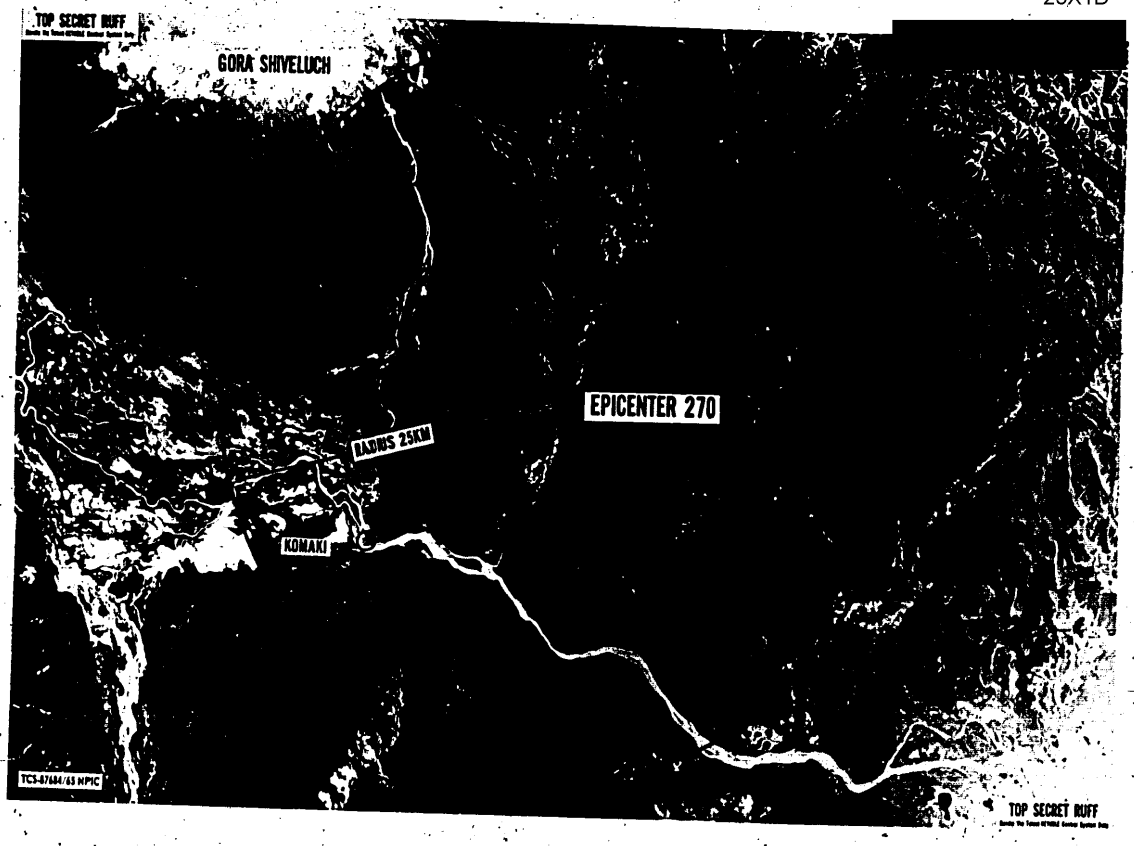

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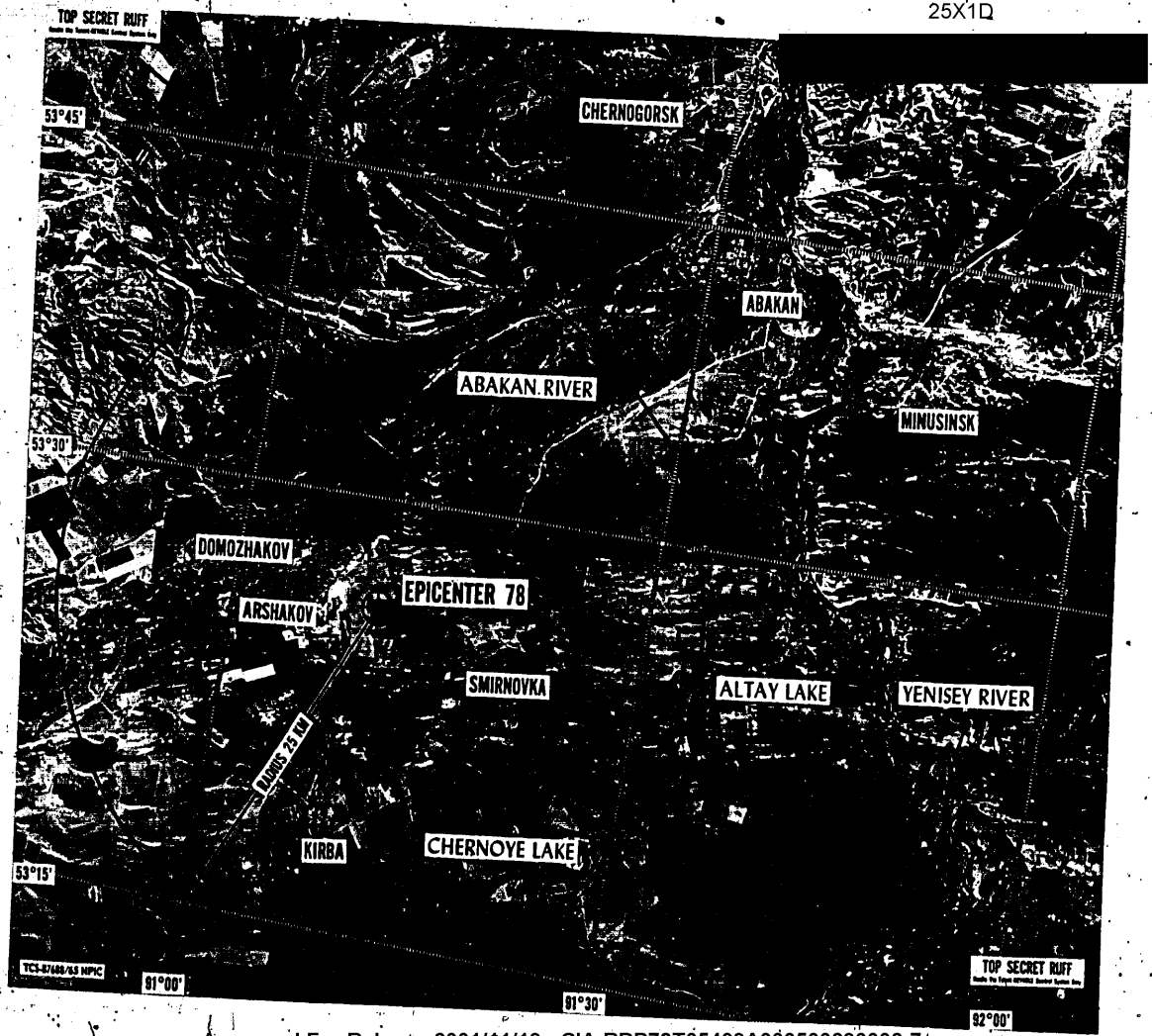

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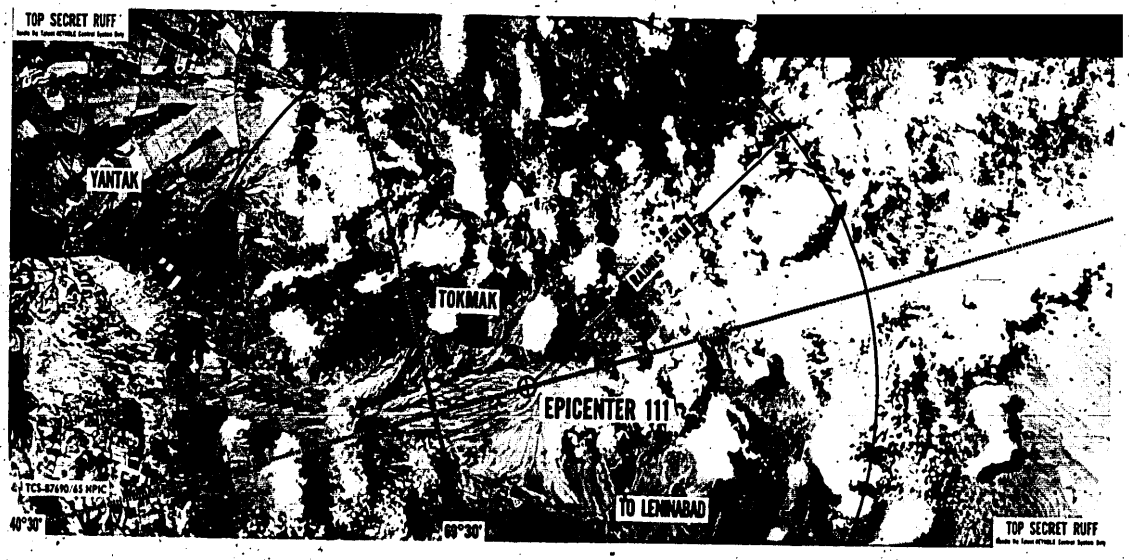

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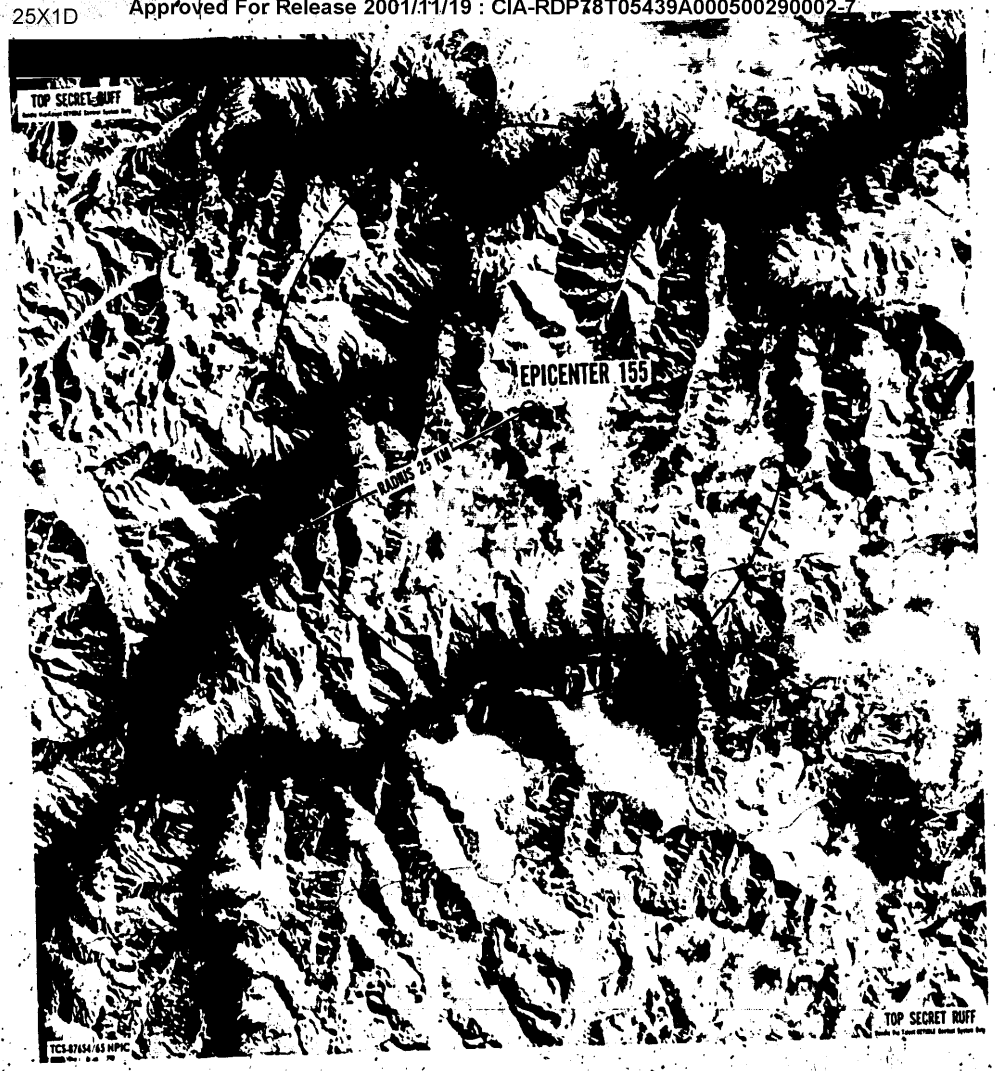

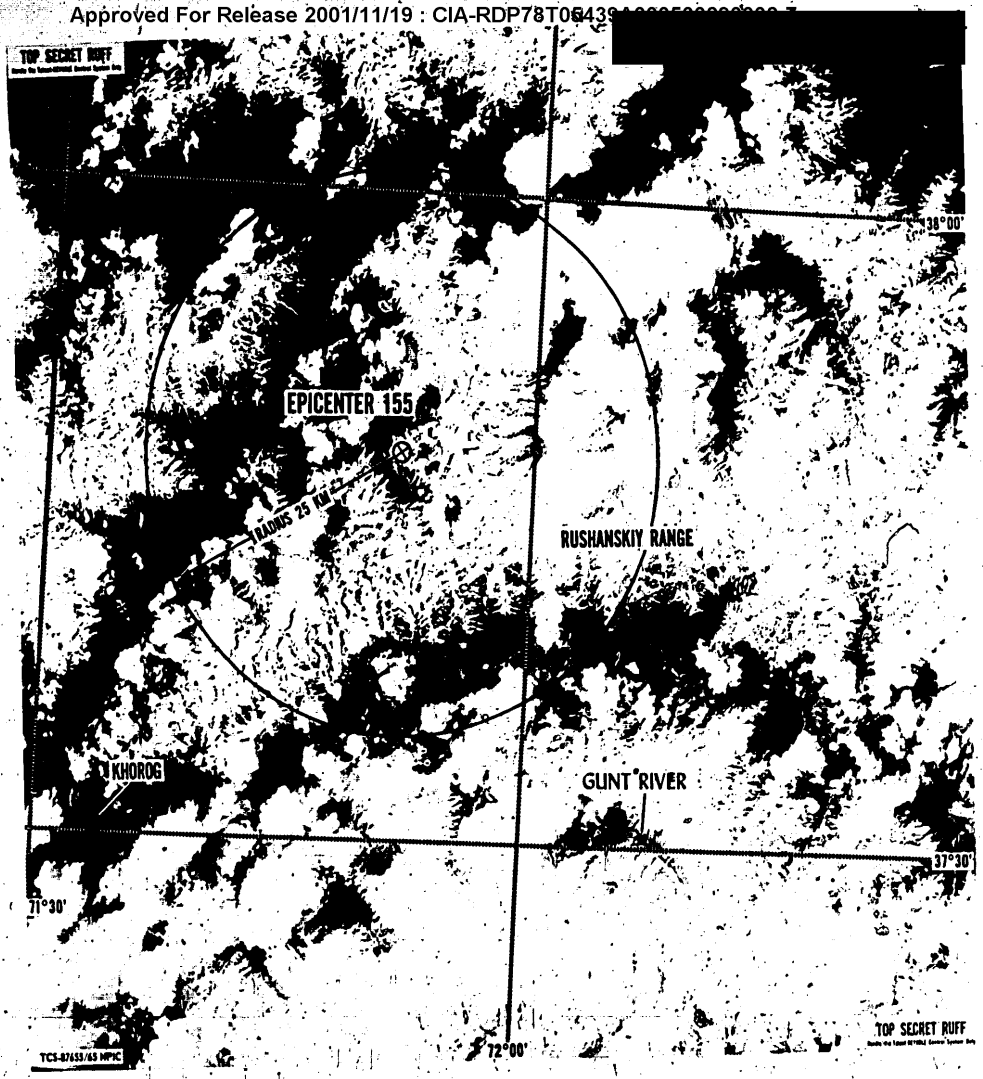

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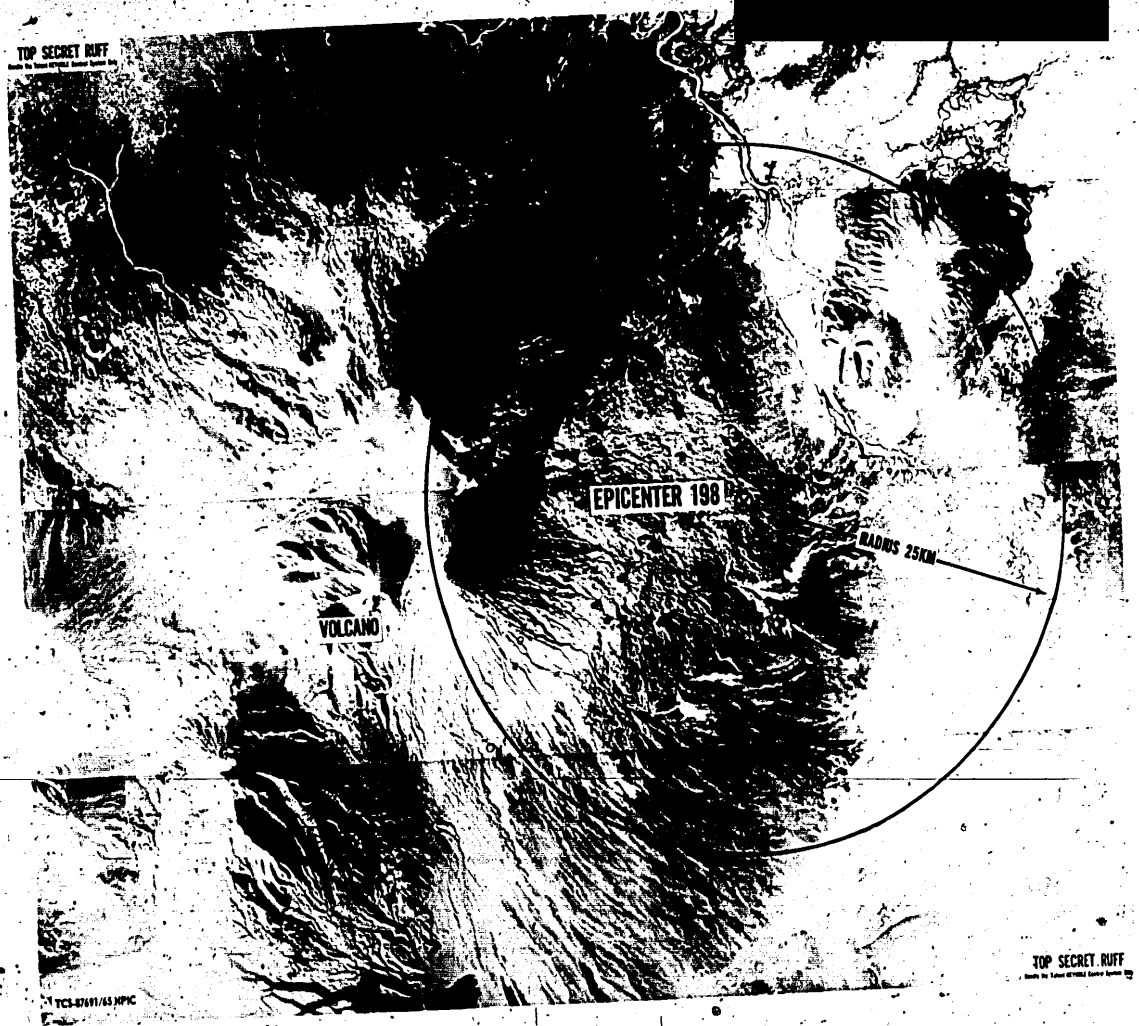

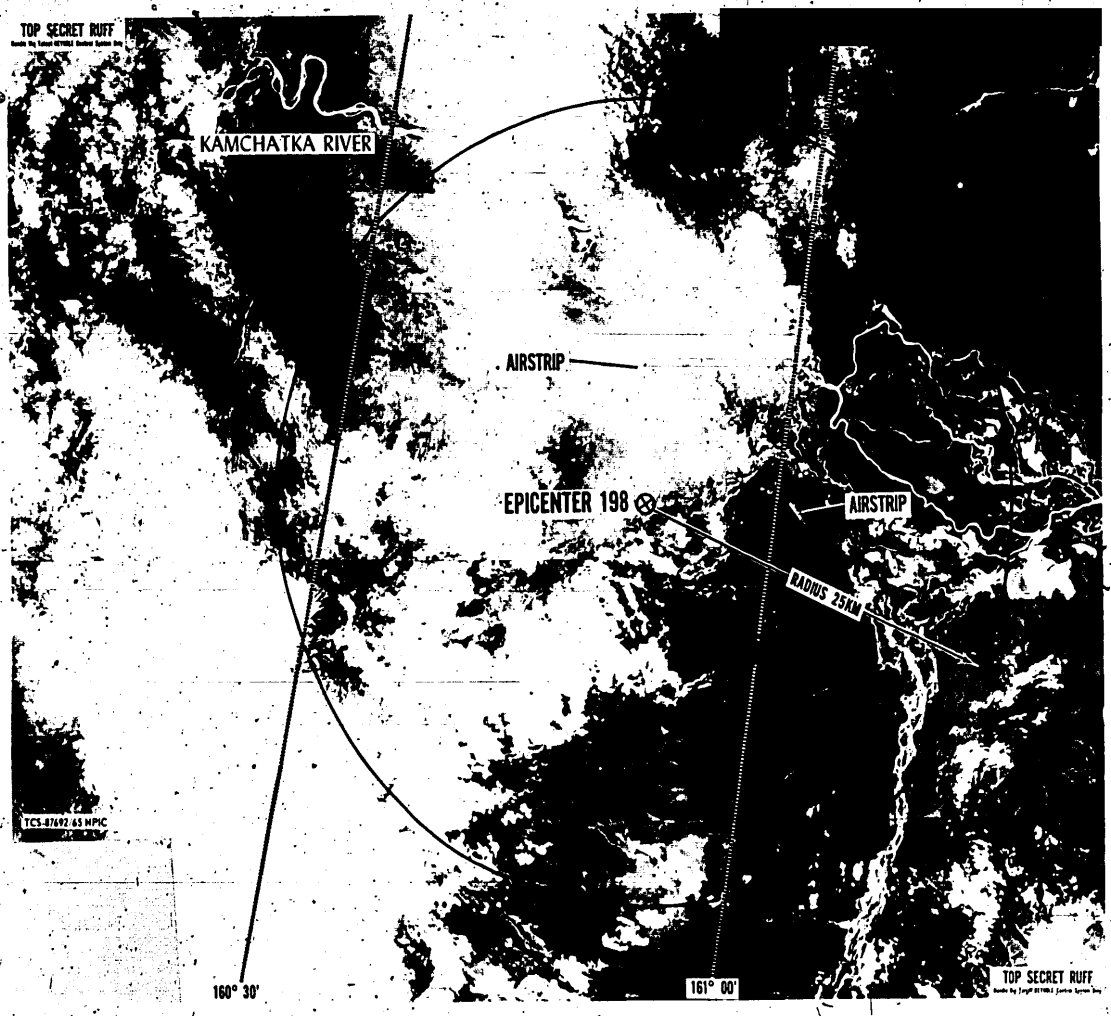

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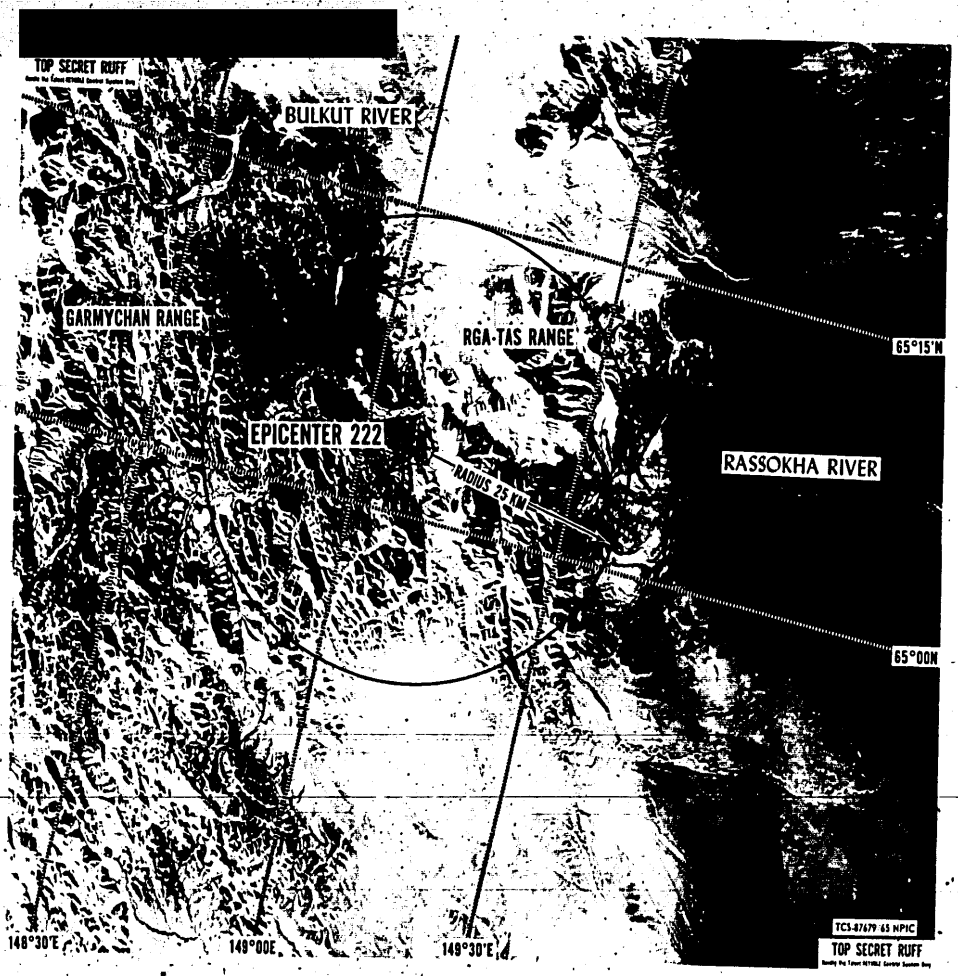

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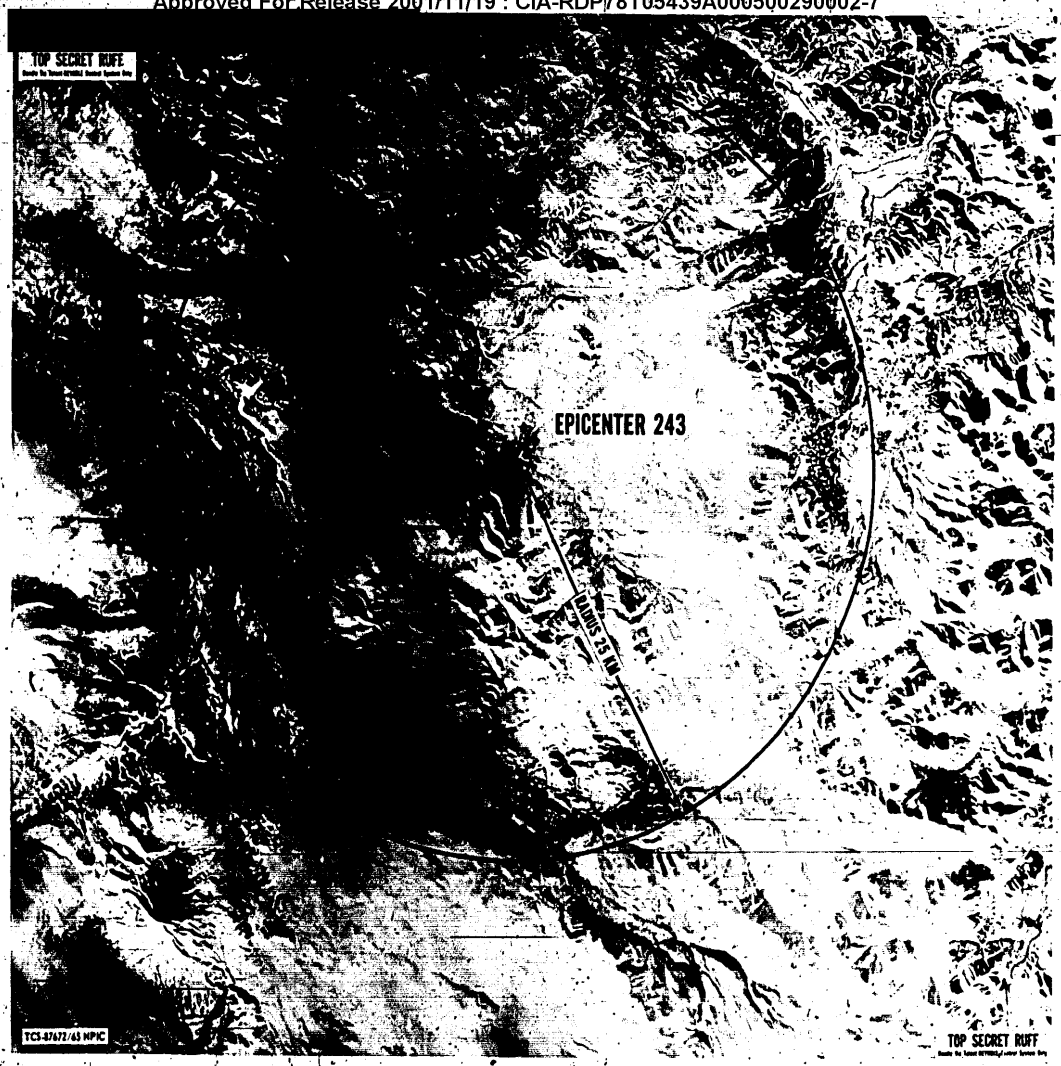

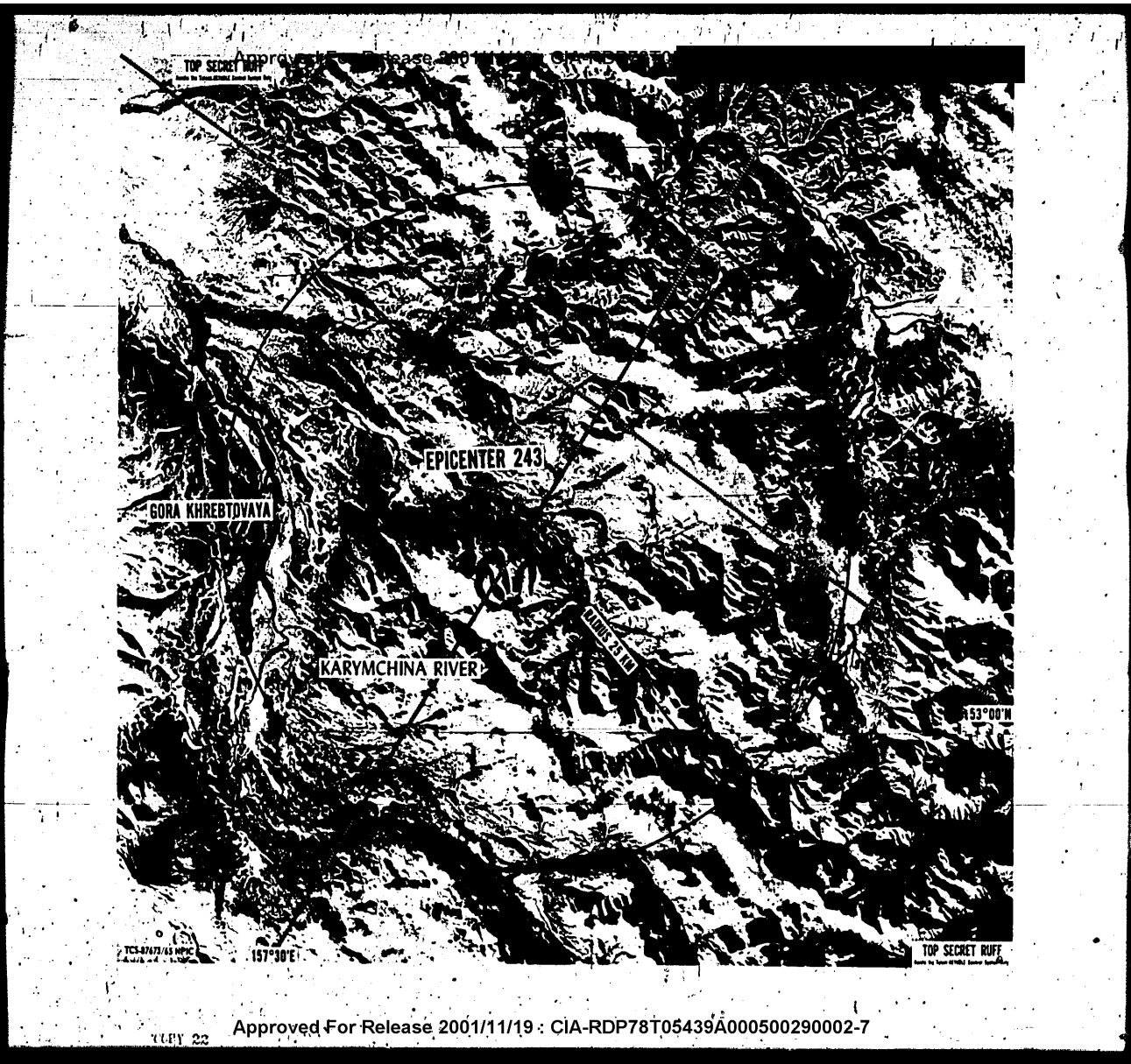

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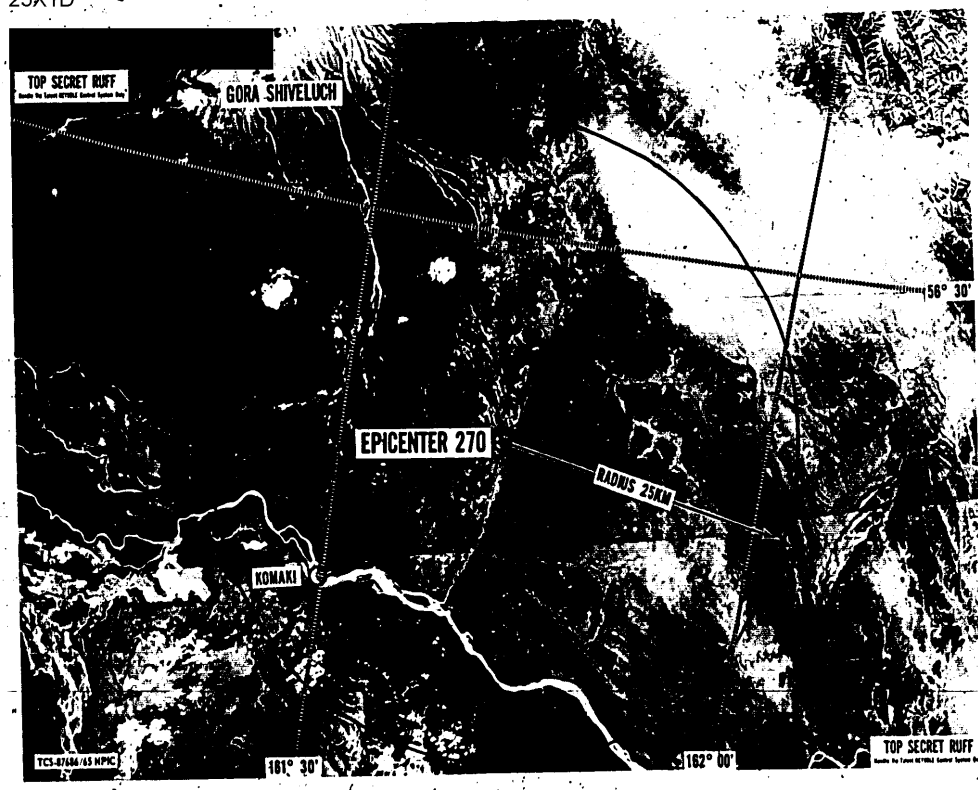

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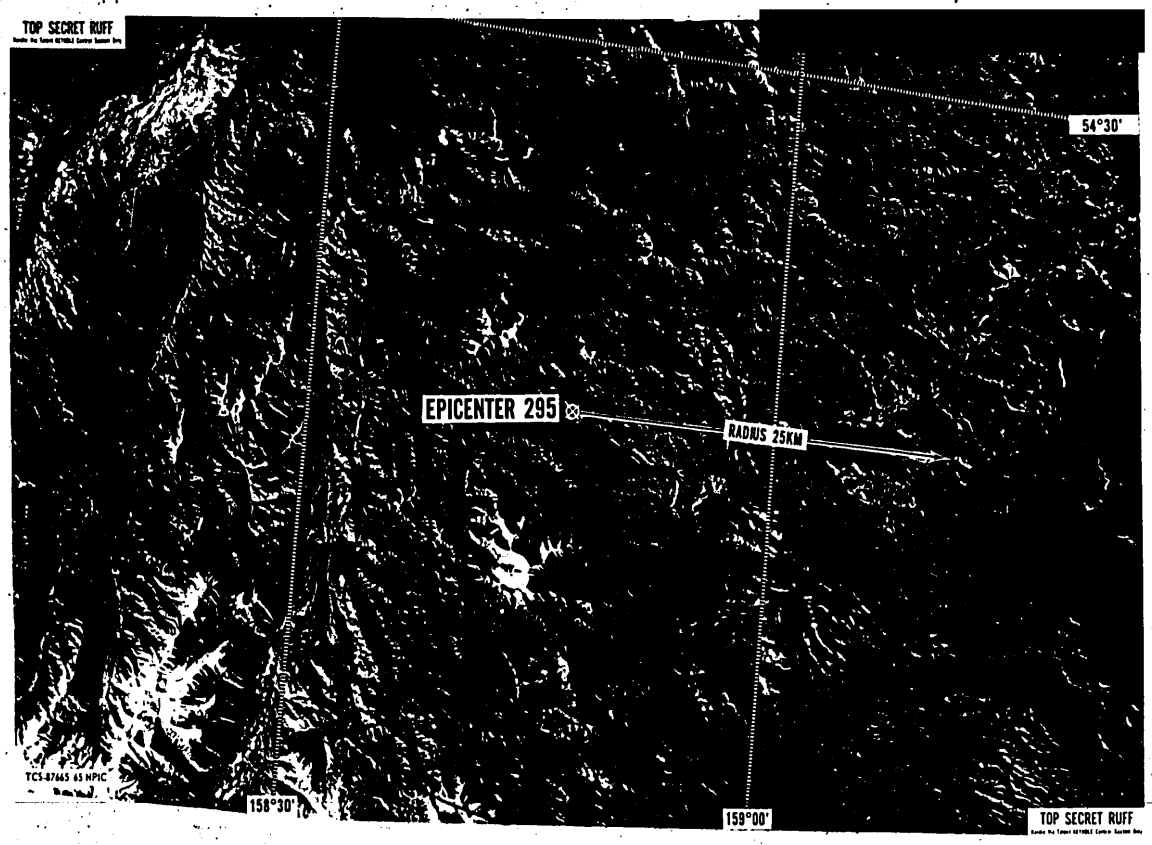

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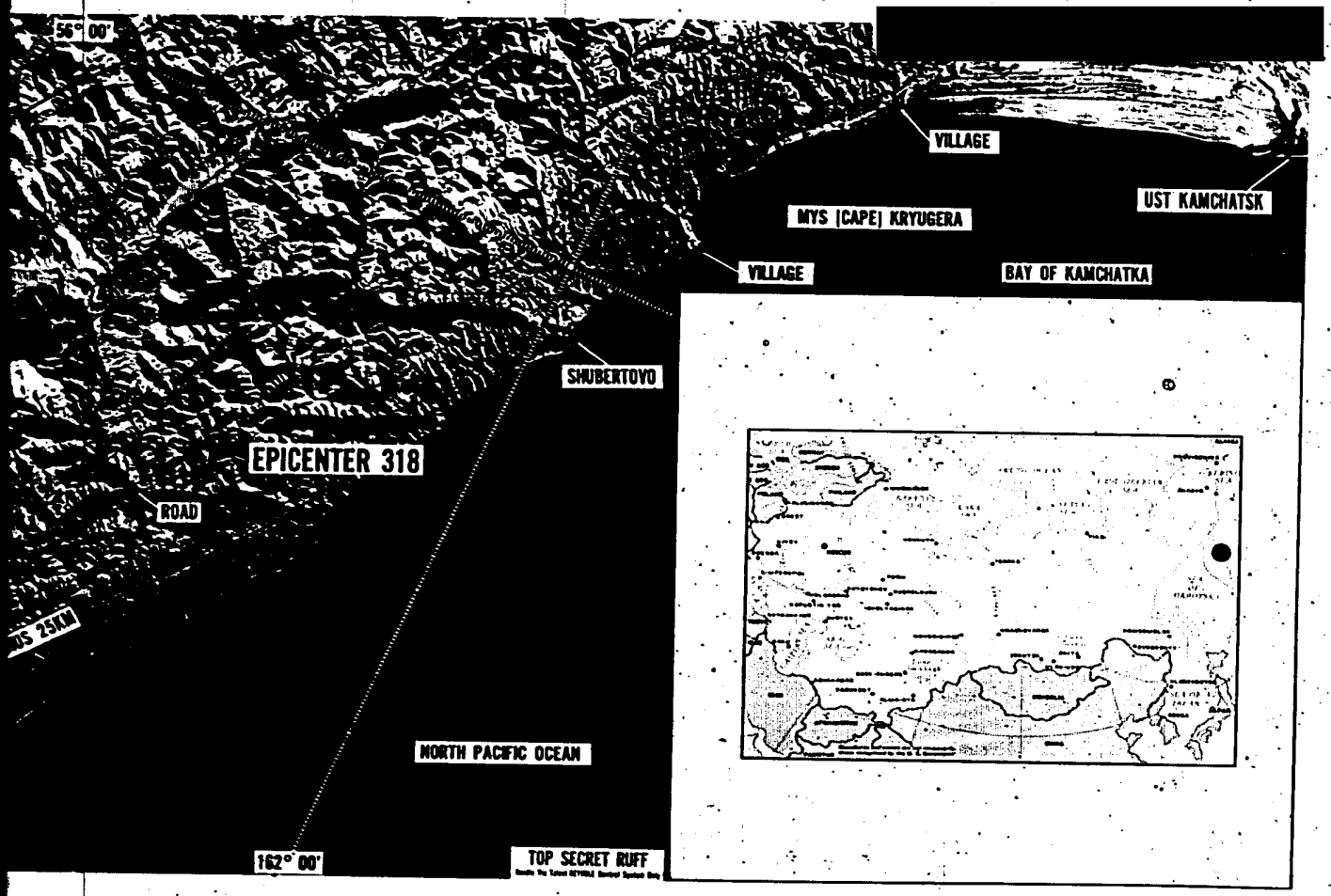
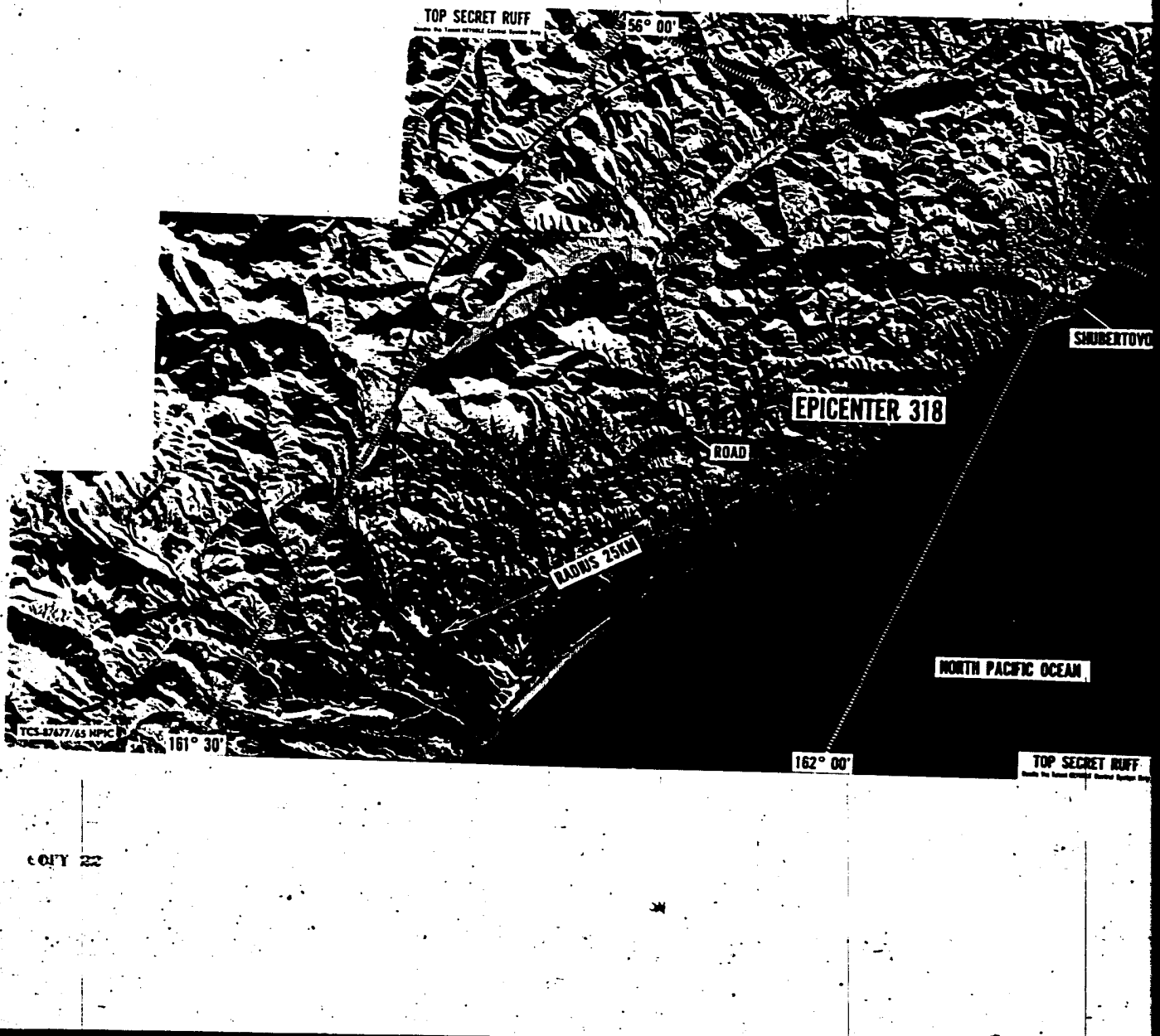
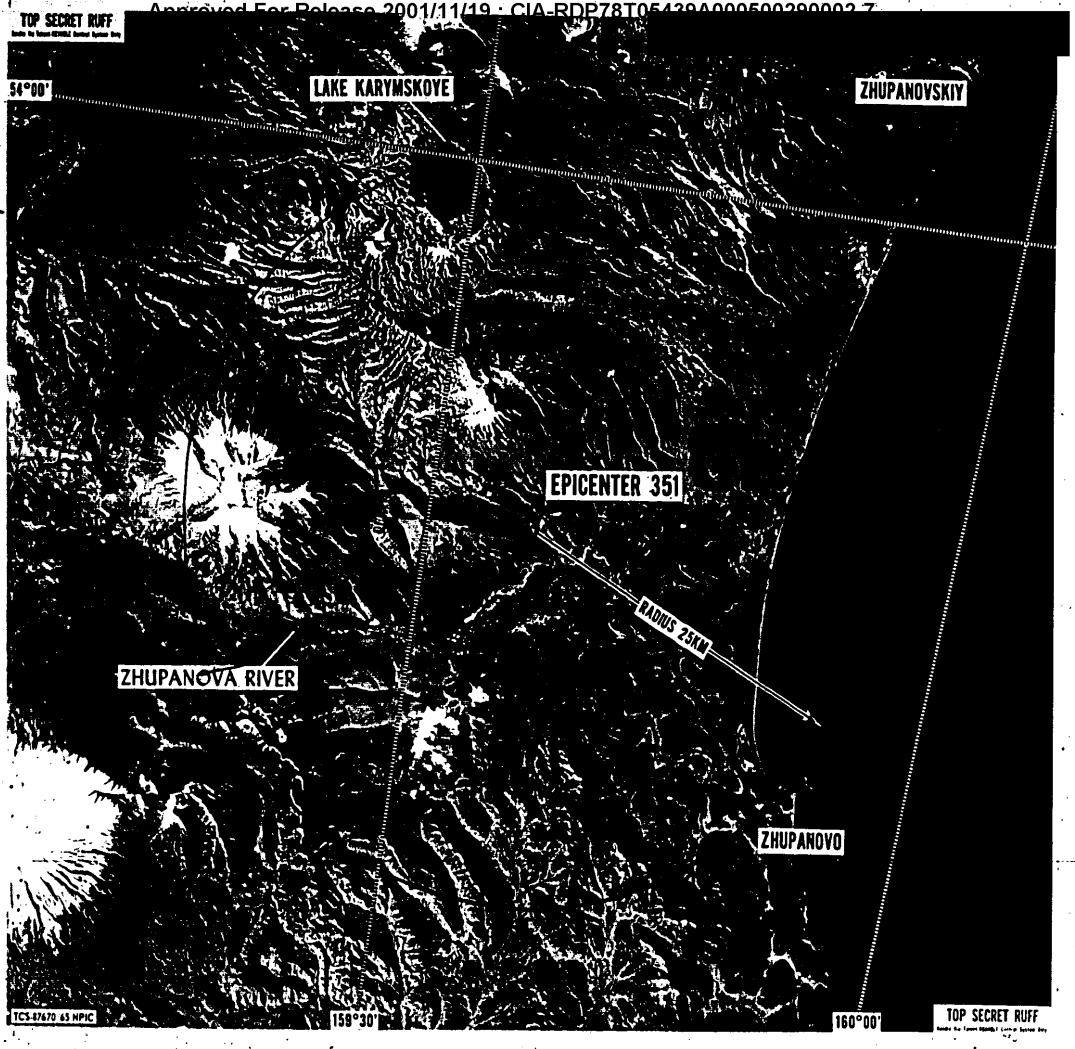

55° 00'
VILLAGE
UST KAMCHATSK
MYS [CAPE] KRYUGERA
VILLAGE
BAY OF KAMCHATKA
SHUBERTOVO
EPICENTER 318
ROAD
NORTH PACIFIC OCEAN
162° 00'
TOP SECRET RUFF


TOP SECRET RUFF
56° 00'
SHUBERTOVO
EPICENTER 318
ROAD
RADIUS 25KM
NORTH PACIFIC OCEAN
TCS-87477/65 NPIC
161° 30'
162° 00'
TOP SECRET RUFF

COPY 22



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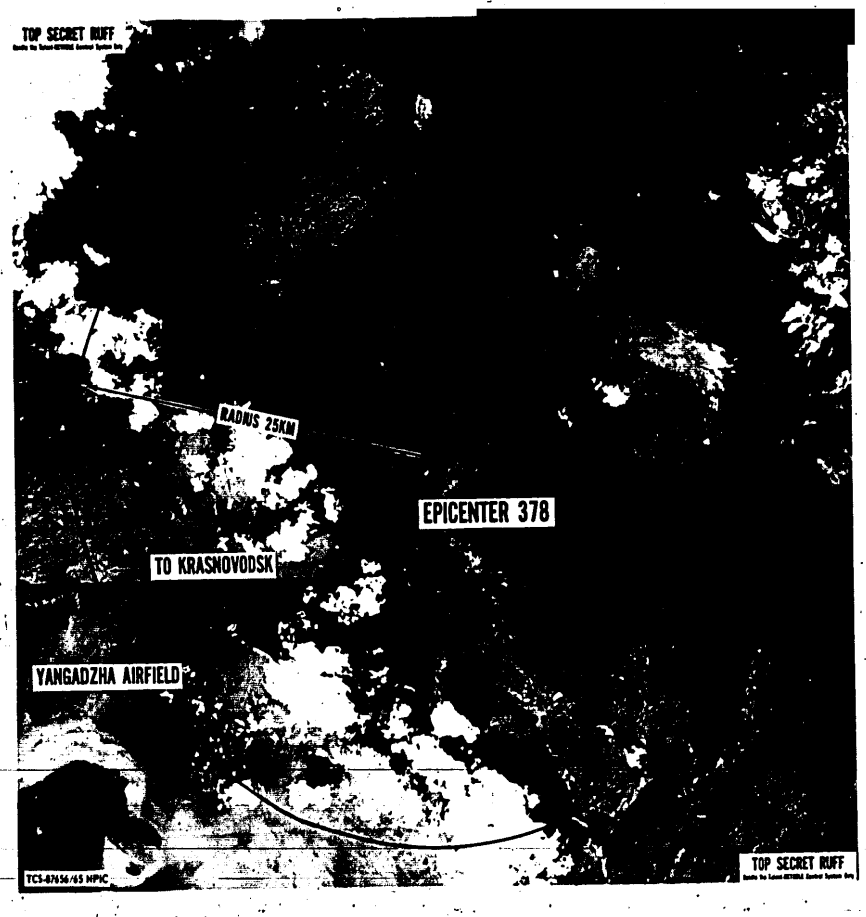

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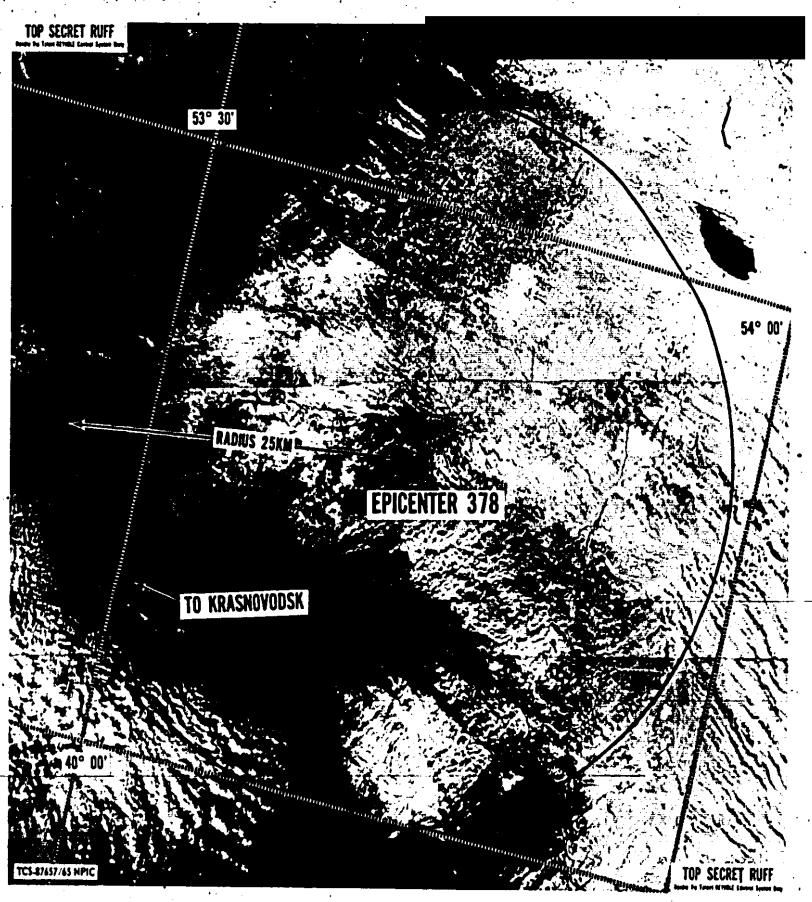

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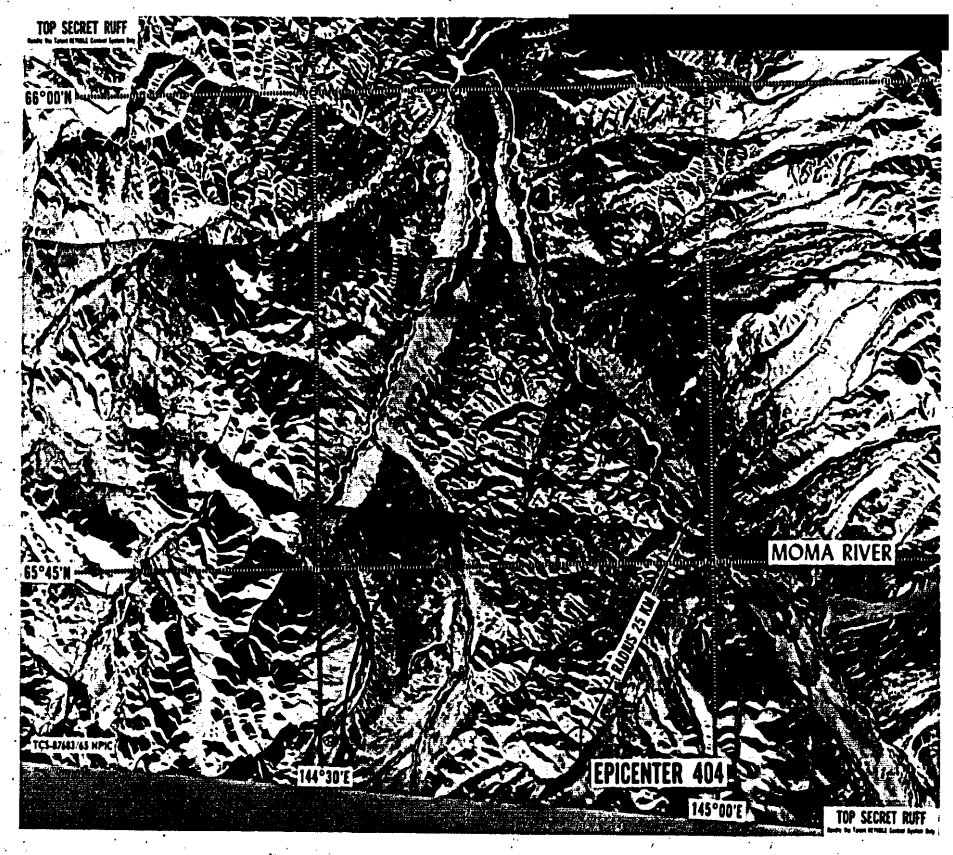

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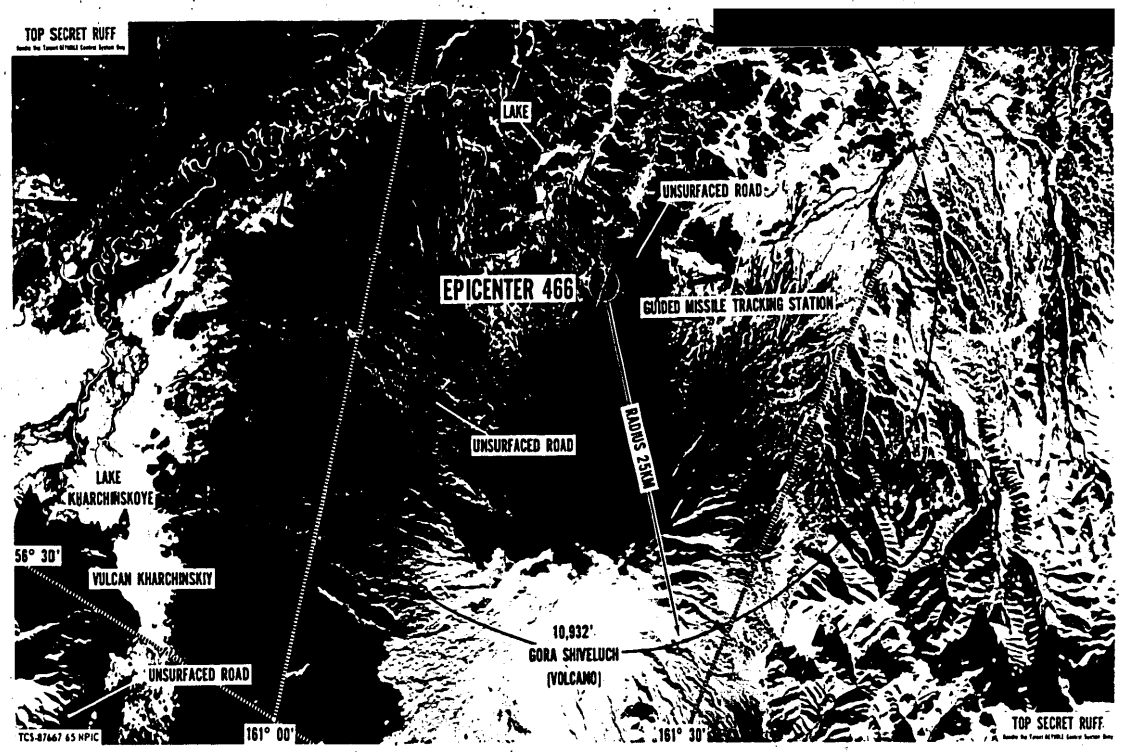

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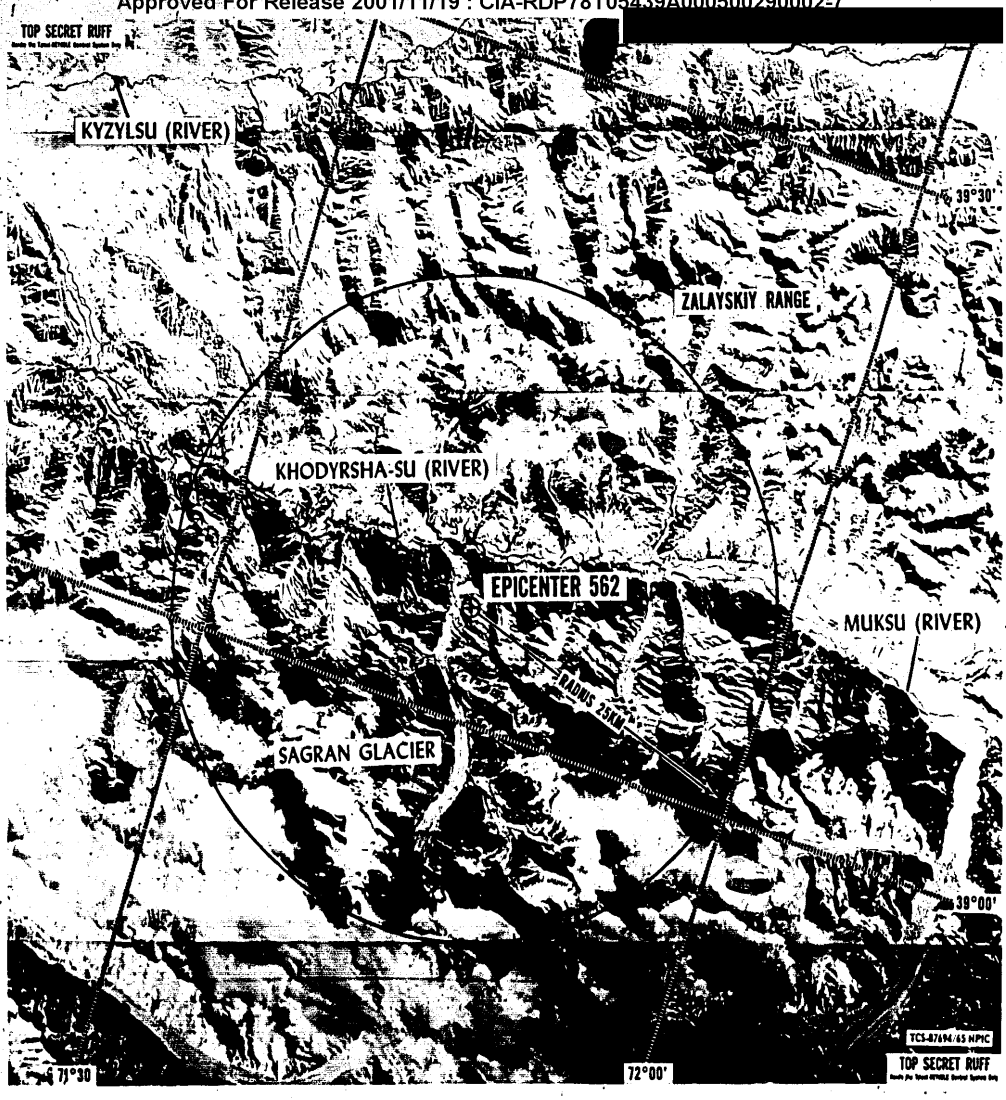

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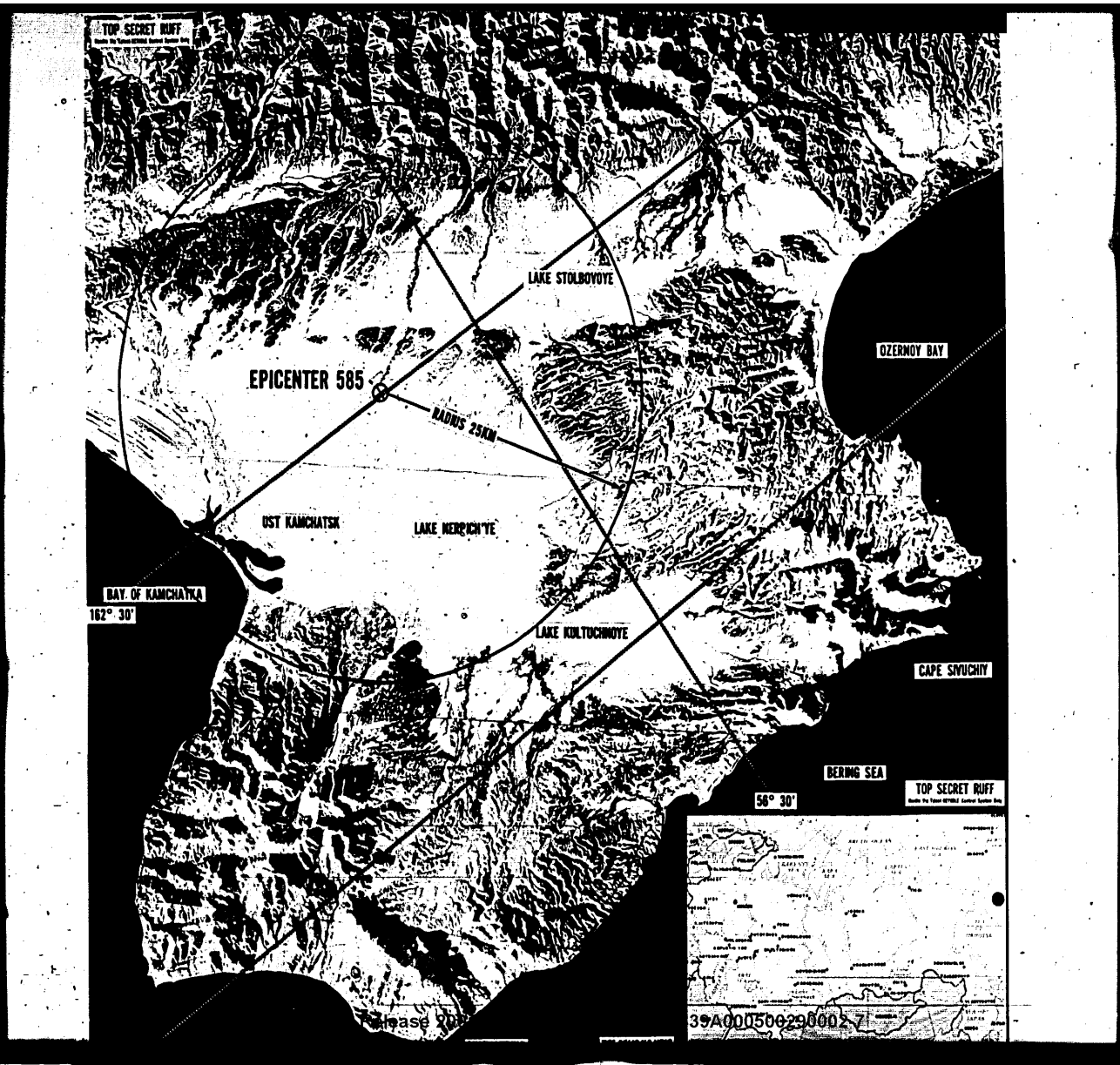

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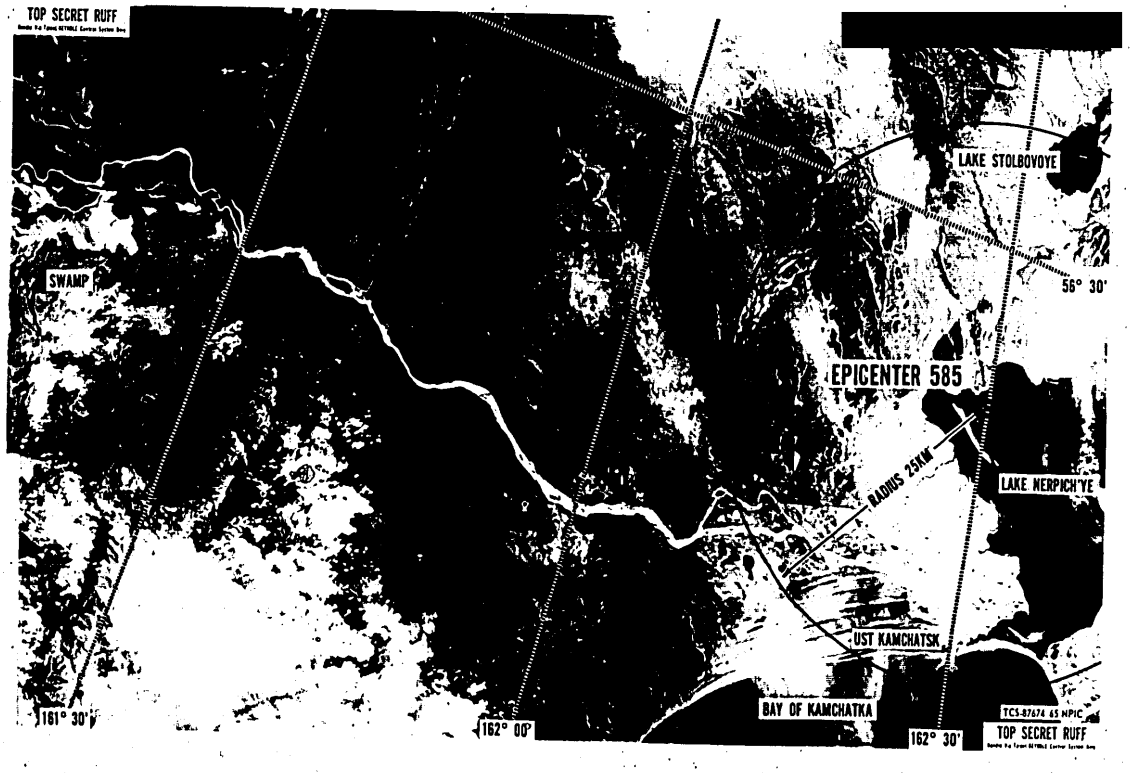

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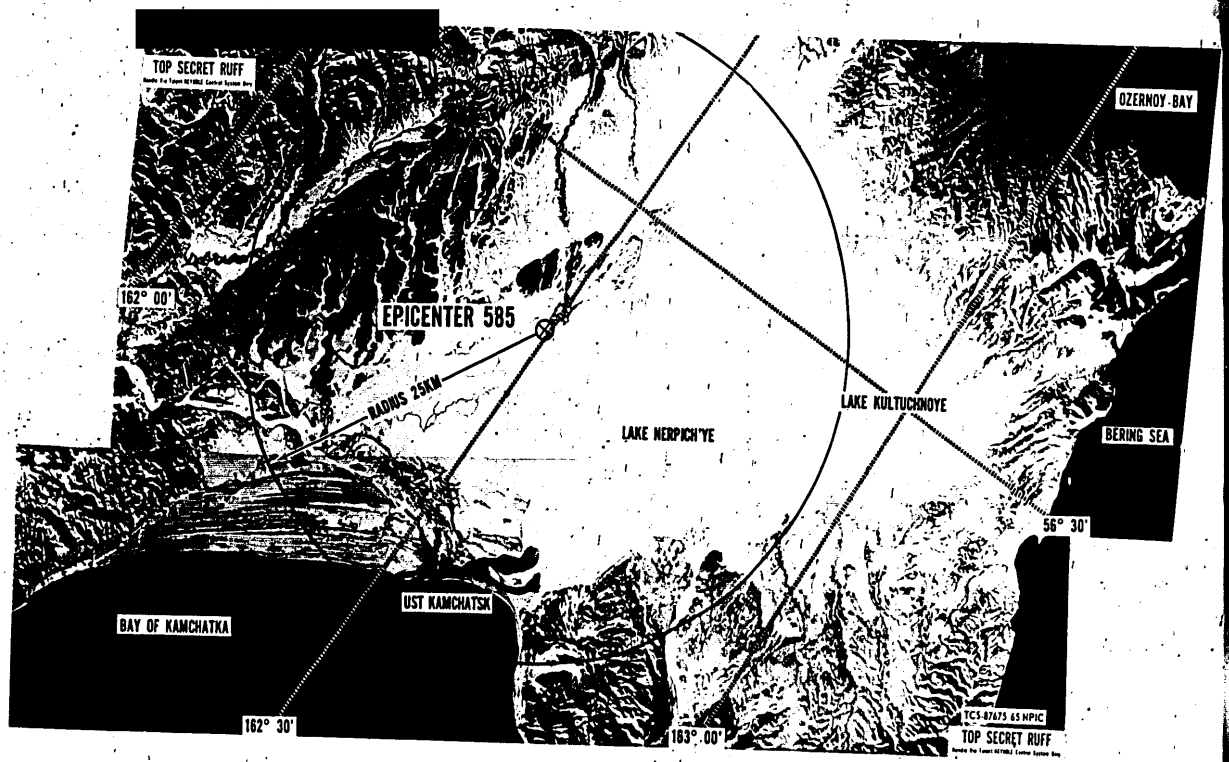

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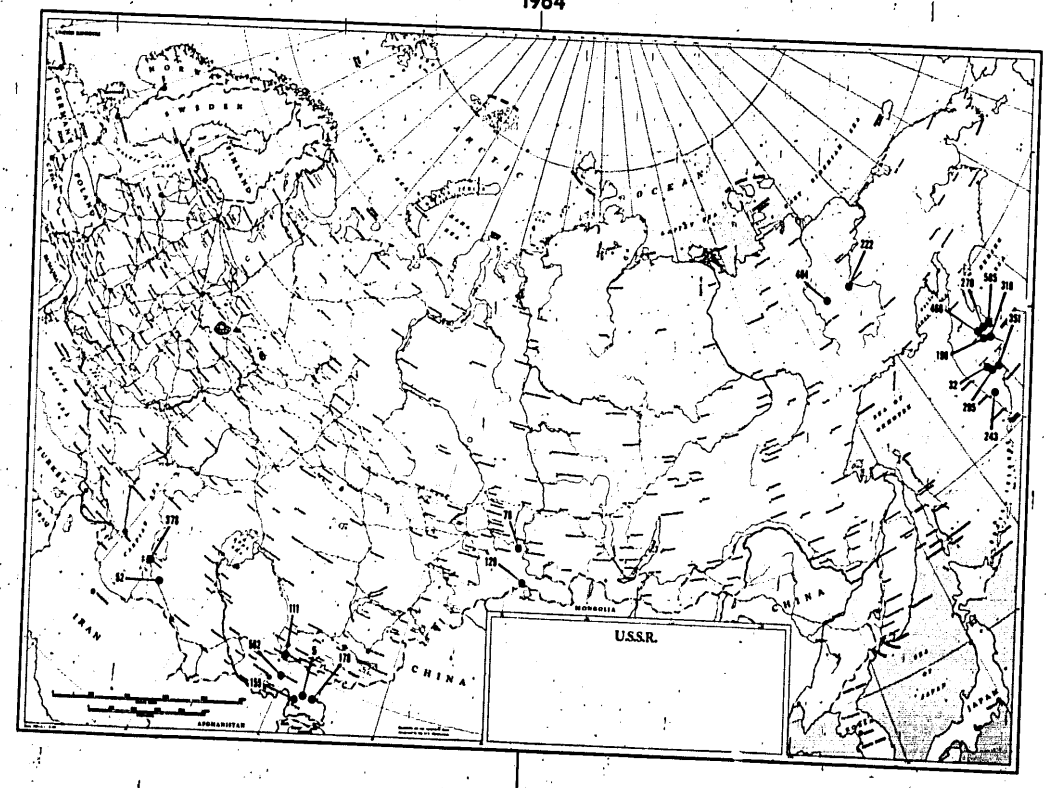
SECRET

TWENTY SELECTED (U) EPICENTERS
USSR
1964



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